NATIONAL INSTITUTE OF SIDDHA

Chennai – 47

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY,

CHENNAI - 32

PRECLINICAL AND CLINICAL STUDY ON

CEGANAVATHAM

(DISSERTATION SUBJECT)

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH III – DEPARTMENT OF SIRAPPU MARUTHUVAM

2010 - 2013

ACKNOWLEDGEMENT

I express my profound sense of gratitude to **Prof. Dr. K. Manickavasakam, M.D(S),** Director, National Institute of Siddha, Chennai-47.

I extend my sincere heartfelt thanks to **Prof. Dr. R. S. Ramaswamy, M.D(S),** for his guidance during his tenure as Head of the Dept. of Sirappu Maruthuvam at National Institute of Siddha.

I express my heartfelt thanks to **Associate Professor Dr. N. J. Muthukumar, M.D(S),** Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai-47, for his valuable guidance and encouragement.

I express my sincere thanks **Dr.V. Mahalakshmi, M.D(S), Dr. M. V. Mahadevan, M.D(S), Dr. D. Periyasami, M.D(S),** Lecturers, Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai-47, for their valuable guidance and encouragement.

I express my heartfelt thanks to **Associate Prof Dr. M. Rajasekaran, M.D(S), HOD, i/c** Department of Gunapadam, National Institute of Siddha, Chennai-47, for his valuable guidance and encouragement.

I express my thanks to **Dr. V. Suba**, Ph.D., Assistant Professor of Pharmacology and **Dr. M. Muthuvel**, Ph.D, Assistant Professor of Biochemistry, **Dr. D. Aravind**, Asst. Professor of Medicinal Botany, National Institute of Siddha, Chennai-47, for their guidance and support in Pharmacological, Biochemical and Botanical analysis of the trial drugs.

I am very much grateful to **Prof. Dr. P. Rathinavelu, M.S (Ortho), D.Ortho,** Department of Orthopaedics, Stanley Medical College, Chennai-1 for his encouragement.

I express my sincere thanks to Chairman and Members of Institutional Ethical Committee (IEC) and Institutional Animal Ethical Committee (IAEC), National Institute of Siddha for for their approval.

I express my thanks to **Mr. M. Subramanian**, M.Sc (Statistics), Senior Research Officer, National Institute of Siddha, for his valuable guidance in statistical analysis of the datas.

INTRODUCTION

Well being of humans are not designed in heaven but by us and the atmosphere around us. Dramatic life style modifications have introduced lots of harmful effects in the form of diseases to the society. Health of an individual not only depends on his physical state but also on his Mental state. Healthy state of a person is not only good to himself but also for the people around him and the community. So, in the present era, it is very important for every individual to keep their health on right track. To make the body and the mind in perfect shape, people are in a quest for a natural remedy which will be rendered by our traditional system.

One such Traditional system is Siddha system of medicine which is one of the oldest Traditional system in the world. It is a system which not only deals with the physical health but also induces changes in the soul of an individual. Our Siddha system stabilises the mind and improves the well being of a person. The medicines used in Siddha system are prepared from Herbals, Minerals and Animals which will not cause any side effects on proper usage. It is a science which deals with the Nature. Natural materials are always admired by people from the past. In this materialised world, people have started to look back at their Traditional science in which the natural atmosphere dwells. Nowadays not only the body of the human being gets affected by disease but also the Mind due to various activities being followed nowadays. So it is very obvious that the society is looking for a system which provides holistic approach for curing diseases and it will be provided by our Siddha system.

Siddha system of medicine was introduced by Siddhars who practised and professed Spiritual practice to attain Salvation. Siddhars are persons who practised Meditations, Pranayamas and other Yogic practices so that they could reach a stage of insight which would provide them supernatural power to cure the sufferings. They discovered many natural medicines which are widely used for treating many diseases.

Siddhar Yugi Munivar has classified Vatha diseases into 80 types in Yugi Vaithiya Chinthamani 800. Cegana Vatham is one among them.The symptoms are pain around the neck, giddiness, pain in the limbs, burning sensation of the eyes, pain all over the body like a sting of a scorpion. This condition can be correlated with Cervical Spondylosis in Modern science.

Cervical spondylosis is a disease which causes pain, swelling, restriction of movements in the cervical region and produces lots of hindrance in day to day activities of an individual. Nowadays pain in the neck has become a matter of major concern. It is mainly due to life style modifications. Pain in the neck is experienced by many people due to increase in usage of computers not only by software professionals but also by people of other professions. Apart from them hard workers who have to lift heavy weights also undergo the same problem. Nowadays most of the people are following a sedentary way of life. So the chances of developing Cervical Spondylosis is also highly increased.

The hectic schedule followed by the people nowadays has reduced the time which was utilised for doing yoga, physical exercises, relaxation etc. Degenerative changes in the body which used to happen only after the fifth decade in life has started to produce degenerative changes in the third decade itself. Many youngsters nowadays are affected by Cervical spondylosis due to degenerative changes in the spine.

It can be seen in people as early as 25 years of age. As the age increases so does the incident rate. 60% of the population older than 45 years of age and 8% older than 65 years of age account for the case of cervical spondylosis reported. In males, the prevalence was 13% in the third decade, increasing to nearly 100% by age 70 years. In females, the prevalence ranges from 5% in the fourth decade to 96% in women older than 70 years.

People are looking for a treatment without any adverse effects which may be caused by Analgesics and Anti–inflammatory drugs used in Modern science. Furthermore, Surgery is also one of the treatment options for Cervical spondylosis in Allopathic system. It may prove to be costly. So the community is looking for a treatment which is cost effective, free from side effects and the one which provides good relief from the disease. Increased prevalence of the disease and the dreadful effects caused by the disease reckons a suitable treatment for the disease.

Maha Analuruva Chooranam (Internal) and Pungan ennai (External) have been taken as the trial drugs. These drugs are also mentioned in Siddha Sastric texts. The Internal drug Maha Analuruva Chooranam is a Herbal preparation. Most of the raw drugs in Pungan ennai which is used for external application have Anti –Vatha property.

Other than the internal and external medications used in Siddha system, an unique art in the name of Varmam has been gifted to the community by Siddhars. Stimulation of certain energy (Varmam) points in the body cures diseases pertaining to the muscles, tendons, ligaments, bones and internal organs. In this study, apart from Internal and External medicines, the effect of Varmam therapy also be assessed.

The Pre clinical and clinical study on “Maha analuruva chooranam” (Internal) and “Pungan ennai” (External) for the treatment of “Cegana vatham (Cervical spondylosis)” has been framed to find out the efficacy of the internal and external medicines along with Varmam.

AIM AND OBJECTIVES

Primary objective:

To evaluate the safety and therapeutic efficacy of "Maha Analuruva Chooranam" (Internal medicine) and "Pungan Ennai" (External medicine) in reducing the pain in Cegana vatham.

Secondary objectives:

- To evaluate the effect of varmam along with trial medicines.
- To study the Siddha parameters before and after treatment.
- To access the disease related to Age, Sex, Socio – economic status, Habits, Family history etc.
- To find out any adverse effects during the trial.
- To evaluate the safety of the trial drug by doing Toxicological studies in animal models.

LITERATURE REVIEW

Anti – Inflammatory and Analgesic activity

K.Lakshmi Sindhoor et al. evaluated the anti inflammatory activity of petroleum ether and ethanolic extracts of *Brassica juncea* against carrageenan induced paw edema. Acute toxicity study was performed up to 2gm/kg p.o and animals did not show any mortality and behavioral changes. Both the extracts inhibited carrageen induced paw edema in a dose dependent manner and among the two extracts ethanolic extract shows better anti-inflammatory activity when compared to petroleum ether extract[1]

Sekar Mahendran et al. evaluated the Synthesis and evaluation of analgesic and anti-inflammatory activities of most active free radical scavenging derivatives of embelin-A structure-activity relationship. Para-substituted embelin derivatives along with embelin were studied for analgesic and anti-inflammatory activities at 10 and 20 mg/kg doses by standard methods. Potent analgesic activity higher than the standard pentazocine was observed. Embelin and both of its derivatives almost completely abolished the acetic acid induced writhing. p-Sulfonylamine phenylamino derivative showed better anti-inflammatory activity than embelin.[2]

M.S Al-Ghamdi et al. evaluated the anti-inflammatory, analgesic and antipyretic activity of Nigella sativa. The aqueous extract of *Nigella sativa* (*N. sativa*) was investigated for anti-inflammatory, analgesic and antipyretic activities in animal models. The extract has an anti-inflammatory effect demonstrated by its inhibitory effects on Carrageenan induced paw edema. It also produced significant increase in the hot plate reaction time in mice indicating analgesic effect. However, *N. sativa* crude suspension had no effect on yeast induced pyrexia. This study therefore, supports its use in folk medicine both as analgesic and anti-inflammatory agent and calls for further investigations to elucidate its mechanism of action.[3]

PEI LUO et al. evaluated the Anti-inflammatory and analgesic effect of plumbagin through inhibition of nuclear factor-kappa B activation. He reported that Plumbagin exhibits anti-carcinogenic, anti-inflammatory and analgesic activity. The results showed that Plumbagin significantly and dose-dependently suppressed the paw edema of rats induced by carrageenan and various pro-inflammatory mediators, including histamine,

serotonin, bradykinin and prostaglandin E2. Studies showed that Plumbagin effectively decreased the production of pro-inflammatory cytokines IL-1β, IL-6 and TNF-α. It also inhibited the expression of pro-inflammatory mediators iNOS and COX-2 while did not inhibit the expression of COX-1. Further studies demonstrated that PL suppressed IκBα phosphorylation and degradation and thus inhibited the phosphorylation of p65 subunit of NF-κB. This study suggests that PL has a potential to be developed into an anti-inflammatory agent for treating inflammatory diseases.[4]

Kumar et al. demonstrated that piperine inhibits adhesion of neutrophils to endothelial monolayer. The inhibition of neutrophils to endothelial monolayer by piperine is due to its ability to block the tumor necrosis factor-α (TNF-α) induced expression of cell adhesion molecules i.e. ICAM-1 (intercellular adhesion molecule-1), VCAM-1 (vascular cell adhesion molecule-1) and E-selectin as analyzed by cell-ELISA and confirmed by flow cytometry. Further, we demonstrate that inhibition of ICAM-1 by piperine is reversible. As nuclear factor-κB (NF-κB) is known to control the transcriptional regulation of cell adhesion molecules hence, we measured the effect of piperine on NF-κB in the cytoplasm and in the nucleus of endothelial cells. We observed that pretreatment of endothelial cells with piperine blocks the nuclear translocation and activation of NF-κB via blocking the phosphorylation and degradation of its inhibitory protein, IκBa. Piperine blocks the phosphorylation and degradation of IκBa by attenuating TNF-α induced IκB kinase activity. These results suggest a possible mechanism of anti-inflammatory activity of piperine. Therefore, piperine or its structural analogues could be used for the development of new anti-inflammatory molecules.[5]

Mohan et al. demonstrated the effect of a polyherbal formulation-PHF [each 3 g powder containing Terminalia chebula R.(0.24 g), Nelumbo nucifera G. (0.24 g), Hemidesmus indicus R. (0.24 g), Zingiber officinale R. (0.24 g), , Quercus infectoria O. (0.12 g), Hibiscus rosa-sinensis L. (0.24 g), Rosa damascene M.(0.24g), Eclipta alba H.(0.24 g), Glycyrrhiza glabra L. (0.24 g)]. Analgesic activity of PHF containing Terminalia chebula was studied in mice using acetic acid induced writhing, tail immersion and hot plate methods. Anti-inflammatory activity of PHF was studied in rats using carrageenan induced hind paw edema and formalin induced rat paw edema methods. PHF significantly ($P < 0.05$) reduced the number of writhings, increased

latency to flick tail in tail immersion method and elevated the mean basal reaction time in hot plate method. PHF significantly ($P < 0.05$) inhibited carrageenan induced hind paw edema and formalin induced rat paw edema. The PHF was tested at dose of 30, 100, 300 and 500 mg/kg. Thus, it is concluded that PHF posses analgesic and anti-inflammatory properties which are probably mediated via inhibition of prostaglandin synthesis as well as central inhibitory mechanism and may have a potential benefit for the management of pain and inflammatory disorders.[6]

Haw-Yaw Young et al. demonstrated the analgesic and anti-inflammatory effects of [6]-gingerol, which is the pungent constituent of ginger. Intraperitoneal administration of [6]-gingerol (25 mg/kg–50 mg/kg) produced an inhibition of acetic acid-induced writhing response and formalin-induced licking time in the late phase. [6]-Gingerol (50 mg/kg–100 mg/kg) also produced an inhibition of paw edema induced by carrageenin. These results suggested that [6]-gingerol possessed analgesic and anti-inflammatory activities.[7]

PREVIOUS STUDIES ON THE EFFICACY OF SPECIFIC DRUGS IN CEGANAVATHAM:

- In April 2012, Chandraprakasa Maththirai and Azhinjil Thailam were studied in treating Ceganavatham.
- In April 2011, Sundara Agnikumara Rasam and arkathy thailam were studied in treating Ceganavatham.
- In April 2011, Theer Anthaskan Maththirai and Arkathi thailam were studied in treating Ceganavatham .
- In March 2010, Mahaveera mezhugu and Vathasamhari thailam were studied in treating Ceganavatham .
- In March 2010, Vithurasa mezhugu and Vatha ennai were studied in treating kumbavatham which is a clinical entity mimicking Ceganavatham.
- In September 2007, Saganavatha chooranam and Vatha noi thailam were studied in treating Ceganavatham.

SIDDHA ASPECTS

The main cause for the disease Ceganavatham is due to the derangement in Vatham.

VATHAM

Definition:

In Siddha system, Vatham or Vayu performs motor and sensory functions at cellular level in the body. It is responsible for the movements of the body. So Vatha humour is responsible for the anabolic activity in the human body.

Synonyms – Vayu, Vali, Arasan, Air.

Vatham:

Vatha = Vali + Aagayam

The combination of Vali bootham and Aagaya bootham forms vatham

Mode of Action:

Actually it is invisible. It can be professed through its movements in our body.

Locations:

Below the navel.

‘நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்

நாபிக்குக் கீழென்று நவில லாகும்.” *- யூகிமுனி*

As per Yugi muni, “Vatham” lives in,

1. Abaanan
2. Edakalai
3. Kamakodi
4. Undhiyin Keezh moolam
5. Hip region
6. Bones
7. Muscles
8. Nerves
9. Joints
10. Skin

11. Hair follicles and
12. Stools.

It also lives in the Gastro Intestinal Tract, Bones, Ear, Thigh, Hip and Skin.

Properties of Vatham[8]

1. Giving briskness
2. Expiration and Inspiration
3. Functioning of the mind, thoughts and body
4. Regulation of the "Fourteen Physiological Reflexes" (Vegam)
5. Functioning of the "Seven Udal Kattukal" uniformly
6. Protection and strengthening of the Five sensory organs. (Iymporigal)

Charecteristics of Vatham:

1. Body ache
2. Pricking pain
3. Tearing pain
4. Nerve weakness
5. Mental distress
6. Movements
7. Pain in the joints
8. Traumatic pain
9. Dislocation of joints
10. Weakness of organs
11. Paralysis of limbs
12. Polydypsia
13. Severe pain in calf and thigh muscles
14. Bony pricking pain
15. Anuria and constipation
16. Unable to do flexion and extension of the limbs
17. All tastes like astringent
18. Excess salivation.

Natural Qualities of Vatham:

1. Kadinam	-	Roughness
2. Varatchi	-	Dryness
3. Elesu	-	Lighter
4. Kulirchi	-	Coldness
5. Asaithal	-	Unstableness
6. Anuthuvam	-	Subtleness

Opposite Qualities of Vatham:

1. Mirudhu	-	Softness
2. Pasumai	-	Unctuous
3. Baluvu	-	Heaviness
4. Akkini	-	Hot
5. Sthiram	-	Stableness
6. Katti	-	Solidity.

Relation of Vatham with Taste:

"புளிதுவர் விஞ்சுங்கறி யாற்பூரிக் கும்வாதம்
ஒளியுவர் கைப்பேறில் பித்துசீறும் - கிளிமொழியே
கார்ப்பினிப்பு விஞ்சிற்கபம் விஞ்சுஞ் சட்டிரதச்
சேரப் புணர் நோயணுகாதே"

The tastes, which increase 'Vatham' are Sour and Astringent.

"வாத மேலிட்டால் மதுரம் புளியப்பு
சேதமுறச் செய்யுஞ் சிறையைம் -ஓதக்கேள்
காரந் துவர் கசப்பு காட்டுஞ் சுவையெல்லாம்
சாரப் பரிகாரஞ் சாற்று"

- கண்ணுசாமியம்

The tastes, which neutralizes Vatham are Sweet, Sour and Salt.

Relation of Uyir Thathukal with Five Elements:

Vatham	-	Air + Sky.
Pitham	-	Fire
Kabam	-	Water + Earth.

"Air" and "Sky" constitutes vatham. Any alterations in the normal functions of Air and Sky causes derangement in Vatham.

Regarding taste, “Air” contains bitter, pungent and astringent taste and “Sky” has Bitter as its taste. So if these are consumed in excessive amounts results in the vitiation of vatham and eventually vatha disease. The six tastes and their constituent elements are as follows.

1. Sweet = Earth + Water
2. Sour = Earth + Fire
3. Salt = Water + Fire
4. Bitter = **Air + Sky**
5. Pungent = **Air** + Fire
6. Astringent = Earth + **Air**

DESCRIPTION OF VATHAM:

As per Siddha texts, the general principles of Vatham are divided into ten subsidiary forms that differs from one another by their Anatomical and by their Physiological actions . They are,

1. PRAANAN : (Centre of Heart)

It corresponds to the Cardiac plexus and refers to the chest. It maintains the action of the heart, the functioning of the mental faculties of perception and concentrations and also responsible for the actions of arteries, veins and nerves. It regulates respiration and digestion. It is otherwise called as “Uyirkkaal”.

2. ABAANAN: (Centre of Moolaadharam)

It corresponds to the pelvic plexus and controls excretion. It is mainly focussed in the lower part of the gut and also occupies the sites in the bladder and genitals. It has the tendency to move downwards. It moves in the whole Genito Urinary Tract and regulates defaecation, micturition, menstruation, parturition and ejaculation. It is otherwise termed as “Kezhnokkum kaal”.

3. VIYAANAN: (Centre of Fore head)

It corresponds to the naso cilary plexus present at the root of the nose and base of the skull and controls the will. It helps in the circulation of energy throughout the nervous system and the movements of various parts of the body. It also transports nutrients and blood throughout the entire body. It is also known as “Paravukaal.”

4. UDHAANAN: (Centre of Throat)

This corresponds to the pharyngeal plexus in the throat region and controls speech and breathing. It is also responsible for the physiological reflex actions like vomiting, hiccup, cough, etc., It has the tendency to travel upwards. It is otherwise named as "Melnokkum kaal."

5. SAMAANAN: (Navel Centre)

It corresponds to the navel region and controls digestion. It supplies the energy derived from digested food substances to all parts of the body. It balances other 'Vayus" it is also called "Nadukkaal."

6. NAAGAN:

It is responsible for the intelligence of an individual, winking, singing and the action of pilo erection.

7. KOORMAN:

It is responsible for yawning, closing of mouth, winking, shedding of tears, vision and opening of the eyes.

8. KIRUKARAN:

It is responsible for salivation and nasal secretion. It helps in digestion and meditation. It produces cough and sneeze.

9. DHEVATHATHAN:

It is responsible for laziness, lassitude, quarreling, arguing, and also for excessive anger. It helps in the movements of the eyeball along various directions and is present in genital and anal region.

10. DHANANJEYAN:

It is present in nose and responsible for swelling of the body and tinnitus. It leaves from the body by blowing up the cranium on the third day after death of an individual.[9]

BEHAVIOURAL CHARACTERISTICS OF VATHA DHEGI:[10]

1. Performs activity	-	Very rapidly
2. Motivated enthusiastic and excitable	-	Very easily
3. Consistency of faeces	-	Hard, Dry, Stools
4. Sexual desire	-	Less
5. Amount of sleep	-	Usually 5-6 hours
6. Quality of sleep	-	Light, easily interrupted
7. Type of dreams	-	Fear, Flying, Running, Jumping, climbing trees and mountains
8. Response to challenge	-	Uncertain, worried and indecisive
9. Speech	-	Fast, omitting words and digressing
10. Gait	-	Fast, with a light step.

PHYSICAL CHARACTERISTICS OF VATHA DHEGI[11]

1. Structure	-	Thinbody and elongated plain looking
2. Complexion	-	Dark, brownish or Black
3. Body weight	-	Light and below normal
4. Skin	-	Dry
5. Body temperature	-	Low, cold extremities
6. Stamina	-	Short
7. Charateristics of eyes	-	Dry, frequent blinking
8. Teeth	-	Very small or protruding crooked
9. Nails	-	Short, rough, brittle, dark and lustreness.
10. Lips	-	Dark, dry, and cracked
11. Colour and texture of hair	-	Thin, Coarse, dry and wiry, darker in colour
12. Joints	-	Loose or rigid and cracking sound
13. Body odour	-	Little or no smell or perspiration

AETIOLOGY OF VATHA DISEASES:

The aetiological factors for all types of vatha diseases including "Ceganavatham" have been described generally in "Yoogimunivar Vaithya Sindhamani perunool-800" and Agasthiyar Kanma Kaandam-300".

THE FEATURES OF EXAGGERATION OF VATHAM:[12]

1. Body weakness and darkness
2. Desire to eat hot foods
3. Shivering
4. Abdominal distension
5. Constipation
6. Reduced immunity
7. Giddiness
8. Insomnia
9. Laziness

THE FEATURES OF DIMINUTION OF VATHAM[12]

1. Body ache
2. Hoarseness of voice
3. Loss of memory
4. Semi consciousness
5. Difficulty in performing work
6. Paleness and coolness of the body
7. Heaviness of the body
8. Cough, sleep and abdominal distension

1. Kanmendhiriyam:

1. Kai - Work done by the hands
2. Kaal - For walking
3. Vaai - For speaking
4. Eruvai - For defaecation
5. Karuvai - For reproduction

In Ceganavatham, Kai is affected since pain and numbness is present in both upper limbs

2. Gnaanendhiriyam:

The five Gnaanendhiriyam are

1. Mei - Feels all types of sensations
2. Vaai - For taste

3. Kan - For vision
4. Mookku - For smell
5. Sevi - For hearing

3. Uyir Thaathukkal:

1. Vatham:

In Ceganavatham the following Vayus are affected.

a) Viyanan:

Neck pain, restricted movements of the neck, radiating pain in the shoulders and upper limbs, tingling sensation, numbness and giddiness.

b) Abanan:

Constipation

c) Samanan:

Indigestion, imbalance in the functions of other vayus.

d) Udhanan:

Cough may be present

e) Naagan:

Sluggishness, mental depression

f) Devathathan:

Sleeplessness

PITHAM:

Pitham is located in Urinary bladder, Heart, Head, Umbilicus, Pinkalai, Abdomen, Stomach, Sweat, Blood, Eye and skin. It is classified into five types as,

1. Anar pitham : It digests all the ingested food substances

2. Ranjaga pitham : It gives colour to the blood

3. Saadhaga pitham : It is used to complete the work properly

4. Alosaga pitham : It gives vision to the eye

5. Piraasaga pitham : It gives colour to the skin.

Saadhaga pitham is more commonly affected in Cegana vatham.

KABAM:

Kabam is located in Semen, Fat, Bone marrow, Nose, Chest, Nerves, Bones, Brain, Large intestine, Stomach and Pancreas. It is divided into five types. They are

1. Avalambagam : It controls other four types of kabham
2. Kiledhagam : It moistens the food
3. Podhagam : It helps to know the taste
4. Tharpagam : It gives cooling effect to the eyes.
5. Sandhigam : It gives lubricating effect to the joints

In Cegana Vatham Tharpagam and Sandhigam are affected.

Udal Thaathukkal:

1. Saaram - It strengthens the body and mind
2. Senneer - It gives power, knowledge and boldness to a person
3. Oon - It gives structure and shape to the body and it is responsible for the movements of the body
4. Kozhuppu - Lubricates the joints and facilitates their functions
5. Enbu - Protects all the internal organs and gives structure to the body
6. Moolai - It is present in the bones and gives strength
7. Sukkilam (or) Suronidham - Useful in reproduction

Thinaigal:

Nilam is classified into five types. They are,

1. Kurinji : Mountain and its surroundings. Kabanoigal and liver diseases are common
2. Mullai : Forest and its surroundings, pitha noigal, vatha noigal, liver diseases are common
3. Marutham : Field and its surroundings.It is the perfect place to maintain good health.
4. Neidhal : Sea and its surrounding, Vatha diseases and Hepatomegaly are common.

5. Paalai : Desert and its surroundings, Vatha, Pitha and kaba noigal are common.

Study of the five lands is very much needed, as some diseases are common in particular lands.

PARUVA KAALANGAL:

As per Siddha Literature a year is divided into six seasons, each consisting of two months.

Sl.NO.	**Season**	**Months**	**Kuttram**
1.	Kaarkaalam	Aavani & Purattasi August 16 – October 15	Vatham ↑↑ Pitham ↑
2.	Koodhir kaalam	Ayppasi and kaarthigai October 16 – December 15	Vatham (-) Pitham ↑
3.	Munpani kaalam	Margali and Thai December 16 – February 15	Pitham (-)
4.	Pinpani kaalam	Maasi and Panguni February 16 – April 15	Kabam ↑
5.	Elavenir kaalam	Chithirai and Vaigasi April 16 – June 15	Kabam ↑ ↑
6.	Mudhuvenir kaalam	Aani and Aadi June 16 – August 15	Vatham ↑ Kabam (-)

↑ - Thannilai valarchi (-) - Thannilai adaidhal

↑↑ - Vetrunilai valarchi

The final diagnosis is confirmed by summarizing all the clinical findings observed by the above methods.

DEFINITION OF CEGANA VATHAM:

Ceganavatham presents with the symptoms like pain in the neck radiating upto the groins, pain in the upper limbs and lower limbs which is of stinging nature, feeling

of heaviness in the body, mental depression, giddiness, burning sensation of the eyes and oliguria. It has been classified under eighty types of vatha diseases.

- Yugi Vaidhya Chinthamani 800

AETIOLOGY:

The common aetiological factors for all types of vatha diseases including ceganavatham have been described generally in Yugi Vaidhya Chinthamani-800 and Agasthiyar Gunavagadam.

In Yugi Vaidhya Chinthamani, the following causes have been given,

"தானென்ற கசப்போடு துவர்ப்புறைப்பு
சாதகமாய் மிஞ்சுகிலும் சமைத்த வண்ணம்
ஆனென்ற வாறினது பொசித்தலாலும்
ஆகாயத்தேறலது குடித்தலாலும்
பானென்ற பகலுறக்க மிரா விழிப்பு
பட்டினியே மிகவுறுதல் பாரமெய்தல்
தேனென்ற மொழியார் மேற்சிந்தையாதல்
சீக்கிரமாய் வாதமிது செனிக்குந்தானே"

"பகரவே வாதமது கோபித்தப்போ
பண்பாக பெண்போக மதுதான்
நகரவே வெகுதூரவழி நடக்கில்
நளிரான காற்றுமே பனிமேற்பட்டால்
மிகரவே காய்கள் கனிகிழங்கு தன்னை
மிகவருத்தி மீறியே தயிர்தான் கொண்டால்
முகரமே முதுகெலும்பை முறுக்கி நொந்து
முழங்காலும் கணைக்காலும் கடுப்பு உண்டாமே"

- Excessive consumption of bitter, astringent and pungent food items
- Consumption of food cooked on the previous day
- Drinking polluted water
- Changing sleep rhythm
- Excessive starvation
- Lifting heavy weight
- Excessive lust

- Sexual indulgence
- Walking long distance
- Living in chill environment
- Excessive consumption of tubers, fruits, curd, etc

Pathology:

When the lifestyle, occupation, food habits of a person is normal there is no way for the development of disease. When any one of them is altered it causes derangement of micro elements in the body (Panchaboothangal). Improper food habits directly affects the elemental composition while other acts also cause derangement of these elements indirectly.

When elemental composition is altered naturally, Uyir thathukkal of the three humours which are made up of these elements also get deranged. This simultaneously leads to derangement of seven udal thathukkal and produces symptoms.

The aetiological factors for Ceganavatham are due to diets which produce excessive Vayu and other factors which causes vitiation of Vayu, Aahayam. Here Vali and Aahayam constitute Vatham, earth and water corresponds to Kabam and fire corresponds to Pitham. So Vatham, Pitham and Kabam are deranged. Simutaneously Udal thathukkal get deranged. These give rise to clinical features of Ceganavatham.

In the Uyir thaathu Vatham, derangement of Viyanan causes pain in the cervical and dorsal spine, pain along the upper limbs, pain like scorpion sting and heaviness of the body. Derangement of Abanan leads to constipation.

Derangement of Uthanan leads to cough with expectoration. Derangement of Samaanan leads to indigestion and imbalance of functions of other vayus. Derangement of Naagan leads to sluggishness and mental depression and of Koorman leads to diminished vision and Devathathan affects the normal sleep rhythm.

In Ceganavatham, Saathaga pitham is also affected with vatham. It produces the features like mental depression and difficulty in performing regular duties because of the pain in the neck and upper limbs.

In Kabam, Tharpagam and Santhigam are affected. Derangement of Thrapagam produces burning sensation in the eyes and the derangement of Santhigam produces pain and stiffness in the neck (cervical joints) rendering difficulty in movements.

Simultaneously along with Uyir thathus there is derangement of Saaram, Senner, Oon, Kozhuppu and Enbu thathus. The whole events constitute the clinical condition Ceganavatham.

Uyir Thathukkal affected in Ceganavatham:

The three Uyir thathukkal Vatham, Pitham and Kabam are affected in Ceganavatham.

Vatham affected in Ceganavatham:

Commonly affected vatham among the Dhasavayukkal (Ten vathams) are Viyanan, Samanan, Abanan, Naagan and Koorman.

- Derangement of Viyanan (vaayu+earth) leads to pain in the cervical and dorsal spine, pain along the upper limbs, pain felt like scorpion sting and heaviness of the body.
- Derangement of Abanan leads to oliguria.
- Derangement of Samanan leads to imbalance of function of other vaayus
- Derangement of Nagan leads to mental depression
- Derangement of Koorman leads to burning sensation in eyes, diminished vision.

Pitham affected in Ceganavatham:

Commonly affected pitham is Saathaga pitham

- Derangement of Saathagapitham produces features like mental depression and difficulty in performing regular activities.

Kabam affected in Ceganavatham:

Commonly affected kabam among the five kabam are tharpagam, santhigam and avalambagam.

- Derangement of Avalambagam leads to imbalance of functions of other vaayus too.

- Derangement of Tharpagam produces burning sensation in eyes
- Derangement of Santhigam produces pain and stiffness in joints

Udal thathukkal affected in Ceganavatham:

Panchaboothangal forming the basic constituents of Seven Udal thathukkal (Saaram, Senneer, Oon, Kozhuppu, Enbu, Moolai and Sukkilam) get deranged. Commonly affected Udal thathukkal in Ceganvatham are Saaram, Oon and Enbu.

Gnanenthiriyam affected in Cenganavatham:

Panchaboothangal forming the basic constituents of these Gnanenthiriyam become deranged. Commonly affected Gnanenthiriyam are Mei (skin) and Kan (eye).

Kanmenthiriyam affected in Cenganavatham:

Panchaboothangal forming the basic constituents of these kanmenthiriyam become deranged. Commonly affected Kanmenthiriyams are Kai (upper limbs) and Eruvai (excretory organs).

CLINICAL FEATURES:

The signs and symptoms of Ceganavatham are described in Yugi Vaidhya Chinthamani and Pararasasekaram as:

- Pain in the neck
- Radiating pain in the shoulders and upper limbs
- Heaviness of the body
- Mental depression
- Giddiness
- Burning sensation of the eyes
- Constipation
- Pain felt like sting of a scorpion
- Numbness and tingling sensation of the upper limbs

They have been mentioned in the following verses:

“கேளுமே கழுத்தின் கீழரைக்குன் மேலும்
கெடியான கரமிரண்டு மிகவே நொந்து
வாளுமே சரிரமெலாங் கனத்திருக்கும்
வாலிபர்க்கு மனங்கண்ணு மயக்கமாகும்

ஏளுமே யிரண்டுகண்ணு மெரிச்சலுண்டா
மேற்றமாய் சலந்தானு மிறுகிக் காணுந்
தேளுமே கொட்டினது போற்க் கடுக்கும்
சகனவா தத்தினிட தீர்க்கந்தானே”

- யூகி வைத்திய சிந்தாமணி

“கண்டதோர் சிகன்ன வாதங் கழுத்தின் கீழரைக்கு மேலும்
மிண்டலங் கரமிரண்டு மிக நொந்து கனத்திருக்கும்
மண்டியே திமிர்த்துக் குத்தும் வலி மிகுத்துவுண்டாகும்
வண்டமர் குழலினாளே மதியினாலுன்னுவாயே”

- பரராசசேகரம்

NOI KANIPPU (DIAGNOSIS)

Diagnosis of Ceganavatham in Siddha is based on Envagai thervu (eight types of examination) and the state of

- Uyirthathukkal
- Udalthathukkal
- Gnanenthiriyam
- Kanmenthiriyam

Envagai thervu (eight types of examination):

“நாடி ஸ்பரிசம் நா நிறம் மொழி விழி
மலம் மூத்திரம் இவை மருத்துவராயுதம்”

“மெய்க்குறி நிறத்தொனி விழிநாவிருமலம் கைக்குறி”

- நோய் நாடல், பாகம் 1

The eight types of examination are,

1. Naadi (pulse reading)
2. Sparism (tactile sensation)
3. Naa (tongue)
4. Niram (colour)
5. Mozhi (speech or voice)
6. Vizhi (eye)
7. Malam (stools)
8. Moothiram (urine)

The findings of Envagaithervu in Ceganavatham are:

1. Naadi

Naadi means a vital force responsible for birth *(- Agathiyar*)

This vital force is divided into three humours, Vatham, Pitham and Kabam. It can be assessed in 10 sites. The commonest site is wrist (over radial artery).

2.Sparisam

By Sparisam the temperature of the body, smoothness, or roughness, dryness, hardness, patches, abnormal growth, sweating, swelling, tenderness and nourishment can be felt.

3. **Naa**

Colour, coating, dryness, movement, deviation, sensory changes, ulcer, conditions of the tooth, and gums are noted.

4. **Niram**

Colour of the skin, mucous membranes, hair and nail are examined.

5. Mozhi

Disturbance in speech, hoarseness of voice, etc are assessed.

6. Vizhi

Testing for acuity of vision, colour, redness, pallor, whiteness, burning sensation, excessive lacrimation.

7. Malam

The waste and excretory products of body are called as malam. The faeces should be semi- solid without hardness and looseness.

Nature, quantity, colour, odour, froth, presence of blood and mucous are noted.

8. **Moothiram:**

The urine is examined by two methods

1. Neerkkuri
2. Neikkuri

Features in Ceganavatham

1. Naadi:

Vathapitham, Pithavatham

“பொருளான வாதத்தில் பித்தஞ்சேர்ந்து

கைகால் தறிப்பு நாகசக்குமன்னம்” ***- நோய்நாடல்***

“பித்தத்தில் வாதமாகில் பிடரியும் காலும் கையும் குத்தது போலே யாகுங் குறுகி மெய்பதுறும் பின்னே”

2. Sparisam:

General body temperature – slight warmth

Tenderness present in neck and upper extremities

3. **Naa**

The tongue is coated.

4.Niram

General colour – mixed colour (Thonthaniram due to mixed thodam)

5.Mozhi

No change or disturbance of voice are found.

6. **Vizhi**

Burning sensation of the eyes is present. In aged patients acuity of vision is diminished.

7.Malam

Some Patients have constipation.

8. **Moothiram:**

Some patients have oliguria.

NEERKKURI:

Urine is collected in early morning after taking a well balanced diet previous day, which do not alter the three thodams. It should be examined within 3 ¾ Naazhigai (90 minutes).

“வந்த நீர்க் கறி எடை மணம் நுரை எஞ்சலென்
றைந்திய லளவை யறைகுது முறையே”

- தேரன் நீர்க்குறி நெய்க்குறி நூல்.

In Neerkkuri examination the following features are observed:

- Niram (colour)
- Manam (smell)
- Nurai (froth)
- Yedai (specific gravity)
- Enjal (quantity)

Apart from these the frequency of urination, presence of abnormal constituents such as sugar, proteins, sediments, etc. are also noted.

NEIKKURI:

The collected urine is kept in a glass bowl and is placed under direct sunlight. A drop of gingelly oil is dropped on the surface and nature of neikkuri is noted. If the drop of oil lengthens like a snake it indicates vatham, if it appears like a ring it indicates Pitham, if it appears like a pearl it indicates kabam.

“அரவென நீண்டின் அஃதே வாதம்”
“ஆழிபோல் பரவின் அஃதே பித்தம்”
“முத்தொத்து நிற்கின் மொழிவதென் கபமே”

- நோய் நாடல் பாகம்-1

When the drop of oil shows shapes of two Kuttram, it indicates thontha neer.

NOI KANIPPU VIVADHAM (DIFFERENTIAL DIAGNOSIS):

Some other types of Vatha diseases mimic Ceganavatham. Careful, clear history taking and examination will reveal the diagnosis. They are:

1. Kumba vatham
2. Kurisa kirisavatham.
3. Kazhuththu vatham
4. Paei vatham

The clinical features of above diseases are mentioned in literatures as below:

1. Kumba Vatham:

“நவிலவே தோள்மீதுங் கரகத்தின் மீதும்
நலிந்து மெத்த வாகியே நசவுண்டாகும்
கவிலவே கன்னமொடு நயனந் தானும்

கழுத்துமே விறுவிறுப்பு மெரிவுங் காணும்
துவிலவே துடிப்பாகுஞ் சிரசு தன்னிற்
சுழற்சியே நாபிக்கீழ் வலியு முண்டாம்
அவிலவே யடிநாக்கி லழன்று காணும்
அலருமே வரு கும்பவாதந் தானே".

- Burning sensation in shoulder and upper limbs
- Burning sensation in the cheek and the eyes
- Twitching over the scalp
- Spasmodic pain in the lower abdomen
- Glossitis

2. Kurisa kirisa vatham:

"சிறப்பான பாம்புவிடம் போல ஏறிச்
செறிவாக விறங்கியதோர் செய்கை போலுந்
துறப்பான சூரையா யரையிற் றட்டைச்
சுழலவே சுருக்கிதான் பற்றி யங்கம்
பிறப்பான பீறியதோர் குடலைப் போல
பிதிர்கின்ற வன்போலும் பிரமி யென்ன
மிறப்பான தோளில்முள் பொதிந்தாற் போல
முயன்றிடுங் காண்குரிச கிரிச மூர்க்கந் தானே."

- Pain in the groins
- Pricking pain in the shoulders

3. Kazhuththu Vatham (Kooni Kiraga Vatham):

"கழுத்தை திருப்பாதே பிடித்து
கதிரிட்டு உளைந்தாற் போலே காணும்
செழித்தே நரம்பு தடித்து நிற்கும்
சீராக அசைக்க வொட்டாது
கழுத்தே பிடித்து இராப்பகலும்
இடரே செய்யும் கழுத்து வாதம்
வழுத்தும் குணங்கள் தரணி தன்னில்
வசையாய் அறிவீர் பண்டிதரே"

- வாதநோய் மருத்துவம்

- Stiffness and restriction of movements of the neck
- Burning pain in neck
- Thickening of nerves in neck
- Symptoms continuing day and night

4. Paei Vatham:

"பெற்றியாம் பெருமையாம் காலும் கையும்
பெருவயிறு நெஞ்சோடு விரலு மூக்கு
ஏற்றியா மெறிகழுத்து மெங்கும் பற்றி
ஏக்கமாய் நொந்துடவும் பெங்கும் வீங்கி
உற்றியா மூணவே நிமிர்த்தெடுத்து
உறுதியாய்ப் பிடிக்கவு மொணமலாகும்
சக்தியாய் வாய் கசந்து மயக்கமாகும்
தரித்திட வொண் ணாது பேய்வாதந் தானே"

- Pain and swelling in the abdomen, upper and lower limbs
- Weakness of hand muscles, difficulty in holding things in the hand.
- Vomiting
- Giddiness
- Swelling all over the body

MANAGEMENT:

In Siddha system the management is mainly based upon the Mukkuttram principle. Treatment is not only for perfect cure but also for the prevention of diseases and rejuvenation of Udal kattukkal. The physician's duty is to diagnose the disease, trace the etiology and choose proper line of treatment.

Thiruvalluvar has stated this as,

"நோய் நாடி நோய் முதல்நாடி அது தணிக்கும்
வாய் நாடி வாய்ப்பச் செயல்"

"உற்றானளவும் பிணியளவும் காலமும்
கற்றான் கருதிச் செயல்" *- திருக்குறள்*

So it is essential to know the disease, its etiology, the nature of the patient, severity of the illness, duration of disease, seasons and the time of occurrence etc.

The management of the disease in Siddha is as follows,

1. **Neekkam(treatment)**
2. **Niraivu(restoration)**
3. **Kaappu(prevention)**

After occurrence of the disease, first it should be treated, restoration should be done and recurrence or further complications should be prevented.

1. NEEKKAM:

Nekkam is based on,

- Balancing deranged thodams to normal state of equilibrium.
- Treating with internal medicine and external medicine.
- Deranged Vatham has to be brought to its normal state by giving purgation. It is mentioned in the following verses,

"விரேசனத்தால் வாதம் தாழும்"

-சித்த மருத்துவாங்க சுருக்கம்

Purgation:

Agasthiyar kuzhambu – 200 mg given with palm jaggery, in early morning (for the first day only)

Internal drug:

Maha Analuruva Chooranam – 1.5 gms bd, with Honey for 48 days.

External drug:

Pungan ennai (QS)

Diet Restrictions:

Mustard, sesame oil, pumpkin, garlic, asafoetida, bengal gram, horse gram, sesbania, bitter guard, coconut, mango and jack fruit should be avoided by patients with Vatha diseases. Sour and astringent diet should be avoided as it will increase Vatham.

"கடுகு நற்றிலத் தெண்ணெய் கூழ்பாண்டங்கள் கடலை
வடுவதாகிய தெங்குமா வருக்கை நற்காயம்
மடிவிலாத வெள்ளுள்ளி கொள் புகையிலை மதுபெண்
இடறு பாகலோ டகத்தி நீக்கிடலிச்சா பத்தியம்"

- சித்த மருத்துவாங்க சுருக்கம்

“புளிதுவர் விஞ்சு கறியால் பூரிக்கும் வாதம்”

- நோய்நாடல் நோய்முதல் நாடல் திரட்டு

2. NIRAIVU:

The patient is convinced to accept the eventuality of the disease and modification of life style.

“ஒன்றிய வாதபித்த கபமிவை யுயரா வண்ணம்
நன்றுறு கறிகளெல்லாம் நாளுமே சமைப்பாராய்ந்தோர்
தின்றிடு மிளகு மஞ்சள் சீரக முயர்ந்த காயம்
வென்றி கொள் சுக்கோடேலம் வெந்தயம் உள்ளி சேர்த்தே”

- ***நோயில்லா நெறி***

To maintain normal level of three humours, pepper, turmeric, cumin seeds, asafoetida, dry ginger, cardamom, fenugreek and garlic should be added generously in diet.

3. KAAPPU:

Siddha system prominently projects prevention of diseases. This is attained by the following methods,

1. Maintaining equilibrium of three humors by adopting vaanthi, kazhichal, nasiyam, nei muzhukku techniques.
2. Avoiding stress and strain.
3. Maintaining good mental health by doing meditation.

VARMAM

Apart from internal and external medications, Siddha system has some special therapies like Varmam, Yogam and Kayakarpam which are distinctive to this system. Varmam refers to vital points in the body that act as energy transformers. They form centres for boosting the vital pranan flow through the intricate nadi system of the body. Nature, by its design, has protected these vital centres by placing them deep inside the body or by covering them with tissues inaccessible to normal attempts of breach.

Varmam is a holistic therapy on its own and tackles the body, mind and spirit. Varmam forms a link between the body, prana and the mind. Varmams have been classified based on the type of pressure needed to apply (a) Paduvarmam (Varmam due to injury), (b) Thodu Varmam (by touch); Thattu Varmam (by blows); (c) Thaduvu Varmam (by massage); (d) Nakku Varmam (by licking); and (e) Nokku (by staring). The widely used and recognised ones are the 12 Padu Varmams and 96 Thodu Varmams; there is less consistency with the other categories simply because of the way of application or the deeper knowledge needed to apply them. In these categories, the Nokku Varmam is the most awe-generating and is rarely seen practiced, as those masters who were able to do this are almost extinct.

Vital points are located over arteries, veins, nerves, joints, bony prominence, ligaments, etc. The changes occurring in the body on being hit at some specific points on the body directly or indirectly with particular force is Varmam[13].

By manipulating the following Varmam points, the symptoms of Ceganavatham can be reduced

- Muduchi
- Kakkattai kaalam
- Manibanthagam
- Kai viral madakku varmam
- Kavuli

Muduchi Varmam:

It is located in nape at the bony prominence of cervical region.

Kakkattai kaalam:

It is located at the shoulder, two finger breadth lateral to the junction of neck and head.[14]

Manibanthagam:

It is situated in dorsal aspect of wrist.[15]

Kai viral madakku Varmam:

It is located in medial aspect of arm just below the shoulder.

Kavuli Kaalam:

It is located above the web space of fingers. For Ceganavatham pressure is applied in kavuli between thumb and index finger.

VARMAM THERAPY:

Varmam points indicated for Ceganavatham:

- Muduchi Varmam (Varma odivu murivu sara soothiram - 1200)
- Kakkattai Kaalam (Varma Beerangi – 100)
- Manibanthaga Varmam (Varma Beerangi – 100)
- Kai viral madakku Varmam (Varma vilakkam)
- Kavuli Kaalam (Varma soothiram – 101)

MODERN ASPECTS

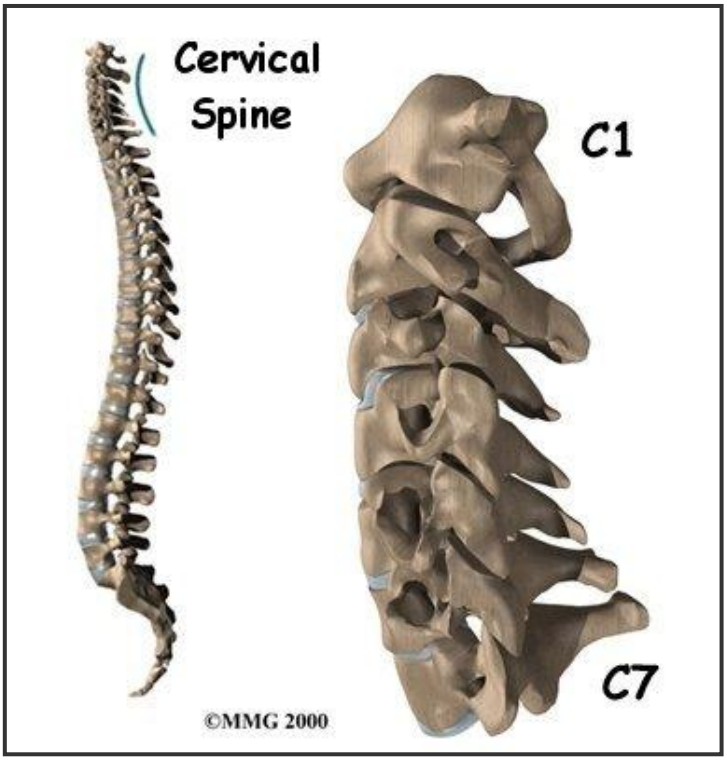
Functional Anatomy of the Cervical Spine

The cervical spine consists of upper seven vertebrae of the spine below the skull. The lower five vertebrae are similar, while the upper two, i.e., atlas (C1) and axis (C2) are different in their anatomical structure.

Each vertebra has two main parts:

1. The body, and
2. The vertebral arch.

The bodies are separated from each other by intervertebral disc and are held together by anterior and posterior longitudinal ligaments.



The pedicles project dorsolaterally giving triangular shape to the vertebral canal. The pedicles are notched both above and below. The transverse process of cervical vertebra is a composite structure. Essentially it has two roots. The true transverse process (posterior root) originates at the junction of the pedicle with lamina and projects ventrolaterally behind foramina transversarium to end in posterior tubercle. The anterior

root projects laterally from the side of the vertebral body (homologous to thoracic rib). Ventral to foramen transversarium and ends in anterior tubercle.

Intervertebral disc

All intervertebral discs put together constitue 25 percent of the height of the vertebral column excluding sacrum. The ratio of the disc to vertebral body in the cervical spine is 1:3. The disc between $C_{6/7}$ is the thickest. The cervical disk is thicker in front than at the back with the result that in erect posture, the anterior height of the discs (summated) is 8mm more than posterior heights (lordosis of the cervical spine). As elsewhere the disk is avascular. The nucleus pulposus has a volume of 0.2ml and a diameter of 0.7cm. It has important property of absorbing and retaining water against pressure. It can change its shape and can distribute equally.

Intervertebral foramina

In the cervical region, the foramina is like a short tunnel bounded ventromedially by the disc and unco vertebral joints and dorsolaterally by the apophyseal joints or superior articular facet. The notched pedicles are superiorly and inferiorly placed. They open obliquely forwards, downwards and laterally and become progressively smaller from above downwards.

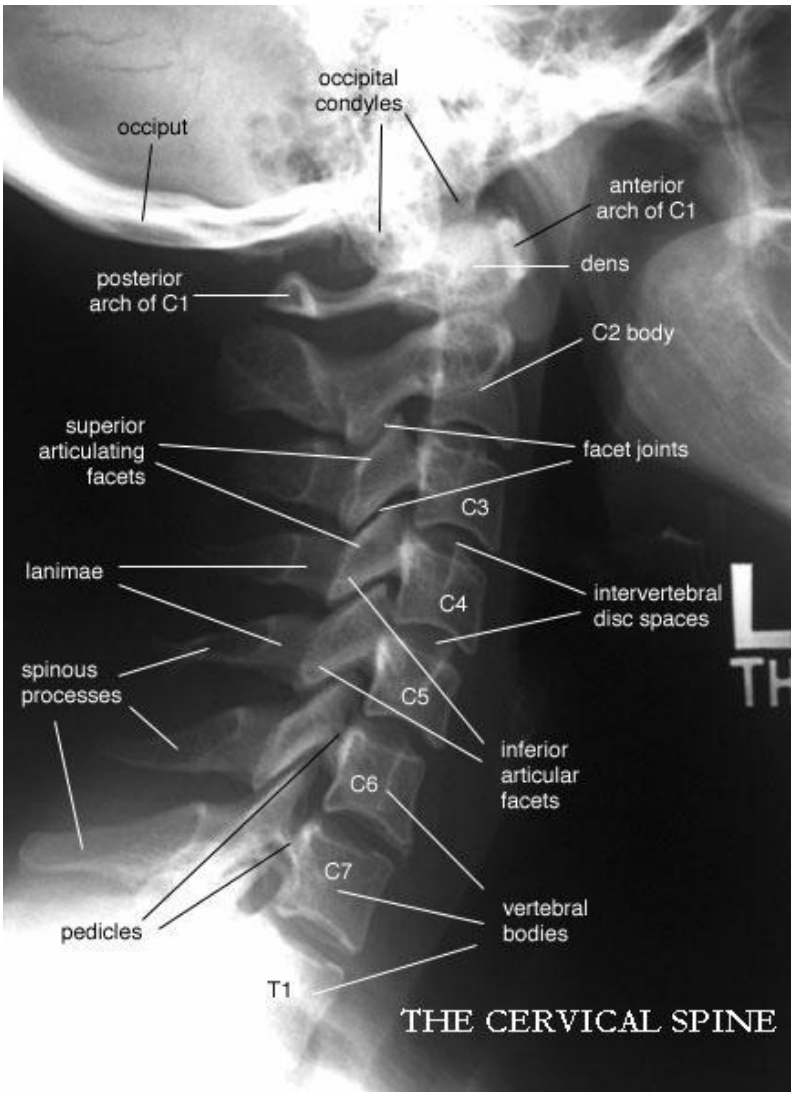
Apophyseal Joints

They are paired transverse true synovial joints between superior and inferior articular processes of adjacent vertebrae. The uppermost is at $C_{2/3}$ level. The joints are surrounded by fibrous capsule and lined by synovial membrane and permits movement. They are not meant for weight bearing. They stabilize the motion segment and more important prevents forward displacement of one vertebra over another.

The Vertebral Artery

The vertebral artery arises from the first part of the subclavian artery and ascends in the transverse foramina of the cervical vertebrae usually from C_6 to $C_{1.}$ It is accompanied by vertebral plexus of veins and by sympathetic fibers which arise in the inferior cervical ganglion in the neck. The artery enters the cranial cavity through foramen magnum. [16]

Movements and Instability of the Cervical Spine



The cervical spine is a classical engineering device of a structure which has adapted to its function. It supplies a strong, stable, flexible and buffered support to the head. It protects the upper part of the spinal cord. It increases in width from above downwards. There is forward convexity and has a mild scoliosis with thoracic spine to the left in 80percent of the cases. The motion segment as described by Junghans includes apophyseal joints and the uncovertebral joints. The movement at a given motion segment is not much, but the cumulative effect is significant.

Possible Movement

Flexion, extension, lateral flexion and rotation are the possible movements. Lateral flexion and rotation is always combined. Nodding movement occurs mainly at the atlantooccipital joint. The atlantoaxial joint is mainly concerned with the rotation of

the head. The pivot for flexion extension is uncovertebral joint. The range of extension is greater than flexion. The posterior neck muscles are the most powerful limiting force for the flexion. In extension, the anterior longitudinal ligament is the limiting force. Taking I_1 vertabra as pivot, the cervical spinal canal changes direction from full flexion to full extension through 90 degrees. Greatest movement occurs at $C_{5/6}$ level. The size of intervertebral foramina increases in flexion and diminishes by as much as one-third in extension of the neck. Such a diminution in the size of the foramina is a feature in individuals with extension of neck compensatory to dorsal kyphosis.

Atlanto occipital Joint

Stability is provided by the cup-shaped articular facets, the anterior and posterior atlantooccipital membranes, the tectorial membrane, the cruciate ligament and the ligamentum nuchae. If these are disrupted the joint is unstable.

Atlanto axial Joint

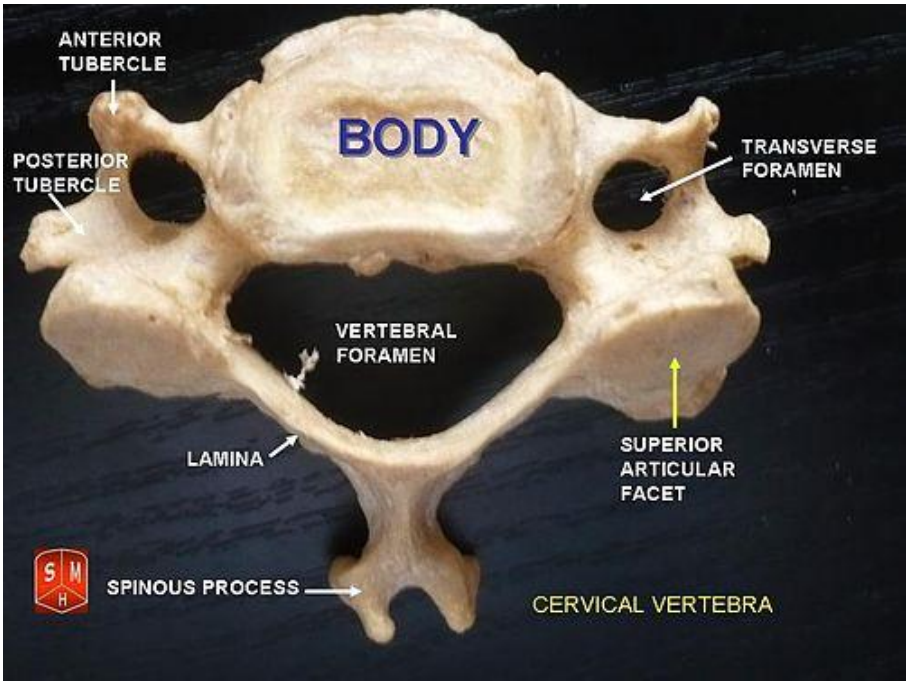
AA joint is the most complex joint and, therefore, the most difficult to analyze. Stability is chiefly provided by the transverse ligament. The tectorial membrane is also a strong ligament.

Instability of the Cervical Spine

The ability of the spine under physiological loads to limit patterns of displacement so as not to damage or irritate the spinal cord or the nerve roots and in addition, to prevent incapacitating deformity or pain due to structural changes defines the stability of the spine. The spine is in a state of unstable equilibrium. It achieves stability with the help of wires such as discs, ligaments and muscles attached to them. Stability of the functional spinal unit is achieved by four stabilizing effects. They are

- Passive stabilization
- Dynamic stabilization
- Active stabilization
- Hydrodynamic stability[17]

Cervical vertebrae



The seven cervical are relatively small and enclose a wide vertebral canal with adequate space for the cervical part of the spinal cord. Each transverse process is perforated by a foramen transversium transmitting the vertebral vessels. The spinous processes all give attachment to a strong midline elastic ligament, the ligamentum nuchae.

The first cervical vertebra, the atlas has anterior and posterior arches, relatively large transverse processes and two lateral masses. The atlas has no body and its spinous process is represented by a tubercle. On the superior surface of each lateral mass is a concave facet which articulates with the convex occipital condyle of the skull. The atlanto-occipital joints permit flexion and extension (nodding movements).

The second cervical vertebrae, the axis possesses some of the features of a typical cervical vertebra but it has a unique vertical projection, the dens (odontoid process). This projects superiorly from the upper surface of its body and represents the body of the atlas. The dens articulates by a synovial joint with a facet on the posterior surface of the anterior arch of the atlas, where it is retained by the alar, apical and transverse ligaments. The planes of the lateral atlantoaxial joints and the pivot joint of the dens allow rotation of the head as in looking from side to side.

The seventh cervical vertebra possesses a long, non-bifid spine, which provides the inferior attachment for the ligamentum nuchae. The spinous process is easily palpable and hence the vertebra is called the vertebra prominens. The foramina transversia of this vertebra are traversed by the vertebral veins but not by the arteries.

Arthiritis involving joints of the cervical spine is often associated with the formation of bony outgrowths which may compress the nerve roots that contribute to the brachial plexus. Injuries to the cervical column, particularly involving fracture or dislocation of vertebrae, may result in spinal cord injury leading to quadriplegia or death. The atlantoaxial joint is particularly liable to disruption in hyperextension injuries.[18]

CERVICAL SPONDOLYSIS

This vague term is applied to a cluster of abnormalities arising from chronic intervertebral disc degeneration. Changes are most common in the lower two segments of the cervical spine (C5/6 and C6/7), the area which is prone to intervertebral disc prolapse. The discs degenerate, flatten and become less elastic. The facet joints and the unconvertebral joints are slightly displaced and become arthiritic, giving rise to pain and stiffness in the neck. Bony spurs, ridges or bars appear at the anterior and posterior margins of the vertebral bodies; those that develop posteriorly may encroach upon the spinal canal or the invertebral foramina, causing pressure on the dura (which is pain sensitive) and the neutral structures.

Clinical features

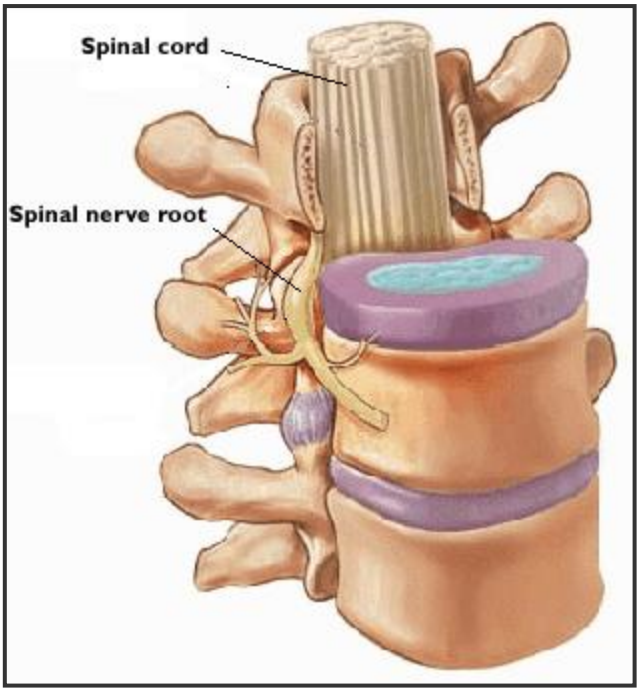
The patient, usually aged over 40, complains of neck pain and stiffness. The symptoms come on gradually and are often worse on the first getting up. The pain may radiate widely: to the occiput, the back of the shoulders and down one or both arms; it is sometimes accompanied by parasthesia, weakness and clumsiness in the arm and hand. Typically there are exacerbations of more acute discomfort, and long periods of relative quiescence.

The appearance is normal, but the muscles at the back of the neck and across the scapulae are tender. Neck movements are limited and painful.

Sometimes the clinical picture is dominated by features arising from narrowing of the intervertebral foramania and compression of the nerve roots (radiculopathy): these include pain referred to the interscapular area and upper limb, numbness and/or paraesthesiae in the upper limb or the side of the face, muscle weakness and depressed reflexes in the arm or hand. In advanced cases there may be narrowing of the spinal canal and changes due to pressure on the cord.

Imaging x-rays show narrowing of one or more intervertebral spaces, with spur formation (or lipping) at the anterior and posterior margins of the disc. These bony ridges (often referred to as 'osteophytes') may encroach upon the intervertebral foramania. MRI is more reliable for showing whether the nerve roots are compressed.[19]

Clinical features of Cervical Spondylosis



Symptoms

Pain in cervical spine disease is either local, referred or radicular. Local and referred pain result from damage to vertebral or articular nerve endings by neoplastic or degenerative processes, or more rarely from stimulation of meningeal receptors by dural distortion. The spinal cord itself is insensitive. Pain is commonly referred upwards to the occiput, downwards to the inetrcapsular region, or laterally to the shoulders and upper arms. It is usually characterised as an "ache" and is not usually felt below the elbows.

True radicular pain can usually be distinguished from referred pain by its nature. It is more sharp than referred pain, and its distribution follows a dermatomal pattern. It may be accompanied by varying degrees od sensory or motor loss in the same districtbution. It can be reproduced or exacerbated by passive or active movement of the neck in such a way as to cause nerve root compromise.

Neurological dysfunction may be sensory or sensory plus motor. The presence of an isolated motor neuropathy is less characteristic of root or cord compression, as the fine sensory fibers are usually the first to be affected, and an anterior hron cell disorder should be considered.

Radicular sensory/motor symptoms are rarely painless. They result from compression of a root within the foramen or rarely from infiltration by tumor. Parasthesia is followed by numbness and clumsiness as proprioception becomes affected, and finally by motor involvement in the same radicular distribution.

Cord compression may cause myelopathy, which may, in acute cases (eg: trauma, metastatic collapse) be initially flaccid but which rapidly becomes spastic. Symptomatically, the spasticity in chronic cases gives rise to 'jumpy legs', usually at night, and leads to stiffness and clumsiness. Lhermitte's sign, where flexion causes an electric shock-like feeling to shoot into the arms and legs, may be seen in spondylosis. Weakness may only be apparent fairly late. A sensory level will develop, which rses as the myelopathy increases. Bladder involvement usually occurs late in cervical myelopahy. Acute cord compression in spinal injury is well known to cause priapism. In extreme cases of degenerative disease, anterior osteophytes can cause dysphagia.

Examination

As clinicians one is most interested in symptoms. They fall into five main groups:

1. Radiculopathy
2. Myelopathy
3. Neck pain
4. Head ache
5. Vertebrobasilar ischemia[20]

Pathogenesis and Pathology of Cervical Spondylosis

Cervical Spondylosis and its manifestations like pain in the neck, branchial neuralgia or spondylotic myelopathy is of more recent recognition.

The term spondolysis does not convey the meaning of pathology but is noncommittal and is universally accepted. It covers the pathology in the spine and the neurological syndrome associated with it. Cervical spondylosis is essentially a degenerative disorder starting in the intervertebral disc and progressing with advancement in age to involve more than one disk. The disorder is common in this country is elsewhere. Payne and Spillane, found that 50 percent of people over the age of 50 and 75percent of those over the age of 65, have typical radiographic changes of cervical spondylosis. This cannot necessarily be related to actual symptoms or disability of the patients. Forty percent of their patients had some restriction of neck movements and 60percent had some neurological abnormality.

Conversely the upper disc levels of C_{3-4} and C_{4-5} showed a comparatively greated mobility and vertebral olisthesis particularly retrolisthesis in extension. These age-related changes of the cervical spine might influence AP canal diameters in aged individuals. That degenerative changes in the cervical spine produce cervical spondylotic myelopathy (CSM) or cervical spondylotic radiculopathy (CSR) after the middle age has now been well recognized. As age advances, several changes occur in the cervical spine, and there are a large number of reports describing these changes. Payne and Spillane have given a detailed anatomic-opathological study based on the work done on 70 specimens of cervical spine.

The pathomechanism of degenerative changes with age play an important role in the development of myelopathy. As age advances these people do develop other

problems like diabetes and high blood pressure, and this has an important bearing on the development of myelopathy as well as its treatment.

Occupational stress is significant contributing factor to the symptomatology of spondylosis making it extremely common in dock workers who carry 100kg weights on their shoulders. It is also common in mine workers, wrestlers, gymnasts, etc. Spondylosis obviously is more common in males. Degenerative changes do occur at the site of the old injury, and indeed their evolution can be followed radiologically from the time of the injury.

When joints become defective in pain sensibility as in diabetes and syringomyelia, unnoticed and repetitive trauma to the joints can give rise to spondylotic changes.

Pathology

Whatever may be the cause of spondylosis the motion segment is affected. Involvement of following structures has to be considered:

i) The intervertebral disc,
ii) Uncovertebral joints,
iii) Apophyseal joints,
iv) The foramina (intervertebral), and
v) The transverse foramina.

Cervical Spondylotic changes in the Aged

Most recently in 1988, Hayashi *et al* from Japan have come out with the concept that CSM in aged patients could have different etiopathology. Generally cervical spondylosis is more common at C_{5-6} and C_{6-7} levels. As age advances, the range of motion at these levels decreases. The upper levels of C_{3-4} and C_{4-5} have more mobility and vertebral olisthesis in extension (retrolisthesis), while narrowing of the intervertebral disk and osteophytes predominates at the lower disk levels of C_{5-6} and C_{6-7}. These age-related changes of the cervical spine influence the AP diameter of the canal in the aged. AP diameter is a good indicator of myelopathy. In the aged, dynamic AP canal diameter in addition to static diameter plays an important role. Posterior osteophytes at C_{5-6} and C_{6-7} have and retrolisthesis at C_{3-4} or C_{4-5} were the major cause of dynamic canal stenosis. This canal stenosis along with the associated disk protrusion, posterior osteophytes, and the infolding of the ligamentum flavum are responsible for

the myelopathic changes. Penning reported the pincer mechanism whereby the spinal cord was pinched between the posteroinferior margin of the superior vertebral body and the anterosuperior margin of the laminae of the inferior vertebra. Under the influence of these aging changes in the cervical spine, disc protrusion, posterior osteophytes at C_{5-6} or $C_{6-7,}$ and retrolisthesis at C_{3-4} or C_{4-5} were important as the primary etiological factor of myelopathy in the aged patients.

Factors Responsible for Myelopathy in Cervical Spondylosis

1. Uncovertebral osteophytes cause anterior compression of the cord
2. Bony ridges on the posterior vertebral bodies cause central compression on the cord
3. Zygapophyseal osteophytes causing posterior compression
4. Incurling of the ligamentum flavum causing posterior compression on the cord
5. Developmentally narrow cervical canal
6. Dynamic effect of narrowing of the cervical canal narrowing
7. Calcification of the posterior longitudinal ligament
8. Teethering of the roots to the osteophytes
9. Arachnoiditis
10. Interference with the vascular supply of the cord
11. Pincer mechanism - The spinal cord is pinched between the posteroinferior margin of the vertebral body and the anterosuperior margin of the laminae of the inferior vertebra[Penning in 1963][21]

Imaging of the Cervical Spine

Radiography with appropriate views give a lot of information about the underlying pathology. The common views are the AP, lateral obliques, open mouth, swimmers view for the C_7 region and the dynamic radiograph. The curvature of the cervical spine is a gentle lordotic curve. The disc space accounts for about one-third of the body height. The AP diameter of the body should be roughly equal to the canal AP diameter. The anterior and the posterior osteophytes are looked for. The effective canal diameter due to these osteophytes is studied. Any calcification in the disc space or behind the bodies is looked for.

Myelogram

Intraspinal tumors and ruptured intervertebral cannot be demonstrated on routine radiographs therefore, various contrast studies have been developed to aid in their detection. Universally used and most helpful of these contrast procedures is myelography. The contrast medium Lipiodol was used initially but is no longer given because of its instability and significant meningeal irritation. Thorotrast was used for a short time, but has been discontinued because of its delayed retention and persistent radioactivity. Isotope myelography or myeloscintigraphy has been described but is considered impractical. A technique of radioisotope scanning of the spinal canal can outline dural, epidural, and vertebral space-occupying lesions..

Computed Tomography

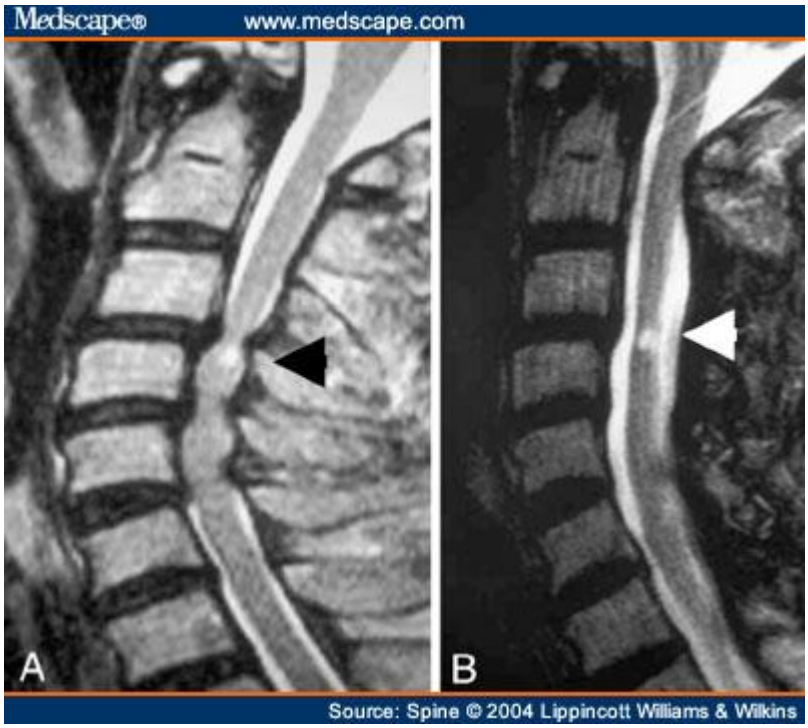
Computed tomography is now commonly used to diagnose herniated discs, spinal canal stenosis and other lesions of the lumbar spine. When this technique is employed, imaging should be done on late-generation scanner with high-contrast resolution. Various scanning techniques may be employed. In general, the slices should be thin (4 to 5 mm) with some overlap (0 to 2 mm). Some centers use continuous nonangled slices, whereas, others use discontinuous slices and change the gantry angle correspond to the plane of the disk being studied. Reformation of images is used at some centers, others believe that this technique provides little real additional information.

When correctly performed and interpreted, computed tomography has a high accuracy rate. It has the advantages of being safe, comfortable and noninvasive. It can detect abnormalities in the lateral recess and foramen, which are less obvious on a myelogram.

3-D Reconstruction Images

The process requires a special software package. Thin 1.5 or 3 mm untangled contiguous or overlapping axial images are postprocessed to produce a 3 D contour image of the bony structures, which can then be rotated and viewed from any angle. Patient cooperation is of utmost importance, and the patient must be motionless during the scan. It is important to stress here that this technique does not provide any new information, but rather presents data in a unique way to be better understood by the referring physician. An experienced radiologist or clinician can obtain all the information from axial and reformatted images, and 3D CT is not an absolute must.

Magnetic Resonance Imaging (MRI)



MRI demonstrates the cord and the subarchnoid space and its relation with the extradural bony and soft tissue elements. Degenerated disc and its protrusion in the spinal canal, associated posterior osteophytes and the thickening of ligaments, facetal hypertrophy, and foraminal narrowing can be demonstrated. It also helps delineate between the intra- and the extradural tumors and also between the intra- and the extramedullary tumours. Gadolinium is the paramagnetic substance used to help diagnosis in difficult cases[22].

PREPARATION AND PROPERTIES OF TRIAL DRUGS

கொடிவேலி

Botanical name : Plumbago zeylanica

English name : Ceylon, leadwort

Family : Plumbaginaceae

Organoleptic character:

Suvai : Kaarppu

Thanmai : Veppam

Pirivu : Kaarppu

பொதுக்குணம்:

“கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூ லைவீக்கங் காழ்மூலம் முட்டிரத்தக்
கட்டுநீ ரேற்ற கனத்த பெருவயிறும்
அட்டுங் கொடிவேலி யாம்”.

- **அகத்தியர் குணவாகடம்**

இதனால் கட்டி, புண், கழலை, வளிநோய், அரையாப்புக்குத்தல், சோபை, மூலரோகம், உதிரக்கட்டு, நீரேற்றம், பெருவயிறு இவை போம்.

CHEMICAL CONSTITUENTS:

Root contains an acrid crystalline principle called ‘plumbagin’ in the form of yellow needles. It is present in all varieties of plumbago to a maximum of about 0.91%.

Root bark – Free glucose, fructose, enzymes – Protease and Invertase.[23]

ACTIONS:

Alterative

Stimulant

Appetizer

Laxative

Uses:

Root is useful in dyspepsia, piles, anasarca, diarrhea, rheumatiam, skin diseases and diseases of the spleen.[24]

புங்கன் வேர்

Botanical name : Pongamia pinnata

English name : Indian Beech

Organoleptic character:

Suvai : Kaippu, Thuvarppu

Thanmai : Veppam

Pirivu : Kaarppu

பொதுக்குணம்:

“வாதக் கடுப்பு மகாமூர்ச்சை தாபசுரம்
வாதகுன்மம் ரத்தத்தால் வந்திடுநோய் ஓதுகின்ற
பண்புரையும் வல்விடமும் போகும்திரண்டருண்டே
பண்புறுபுங் கம்வேர்க்குப் பார். “

- **அகத்தியர்குணவாகடம்**

இது வாதகுடைச்சல், மூர்ச்சை, வறட்சுரம், வாதகுன்மம், குருதியினால் பிறக்கின்ற நோய்கள், புண், புரையோடல், பாம்பு நஞ்சு இவைகளை நீக்கும்.

CHEMICAL CONSTITUENTS:

Furanoflavones, karanjin, pongamin, kanjone, pongaglabrone, pongamol[25]

ACTIONS:

Astringent
Alterative
Antiseptic
Stimulant

Pharmacological activities:

Anti bacterial, antipyretic, anthelmintic, sedative.[26]

Uses:

Root extract mixed with coconut oil can be used for healing wounds.

ஆயில் பட்டை

Botanical name : Chukrasia tabularis

பொதுக்குணம்:

"ஆயிலுரியை யடிநீரு ணித்தியமெய்
யாயி லுரியையெனி லாவிமிசை யாயில்
வரிசையாக் கற்குநிகர் வல்லியட்டுண் மெய்க்கு
வரிசையாக் கத்தையுறு வை."

- தேரையர் யமகம்

வாதாதி முத்தோடங்களையும் பழைய சுரத்தையும் போக்கும்.

CHEMICAL CONSTITUENTS:

Haloptelin – A & B, friedelin, epifriedelinol, B - sitosterol, tannins, 2 - aminonapthaquinone. **Database, Vol – II, P – 172**

ACTIONS:

Febrifuge
Counter –irritant

Pharmacological activities:

Anti – inflammatory, astringent, digestive. ***(Database, Vol – II, P – 171, 172)***

Uses:

They are used in inflammations, rheumatism. ***(Database, Vol – II, P – 171 – 172)***

வாய்விளங்கம்

Botanical name : Embelia ribes

Synonyms : Embelia robusta, Embelia indica

English name : Embelia

Family : Myrsinacae

Organoleptic character:

Suvai : Kaippu
Thanmai : Veppam
Pirivu : Kaarppu

பொதுக்குணம்:

"பாண்டுகுட்டம் குன்மம் பருந்தூல நோய்வாதந்
தீண்டு திரிவிடஞ் சிரந்துண்டம் பூண்டமடி
நோய்விளங்கக் காட்டாத நுண்கிருமி யாசனப்புண்
வாய்விளங்கக் காட்ட விருமார்". ***- அகத்தியர் குணவாகடம்***

இதனால் பாண்டு, குன்மம், வாயு, பாம்பு நஞ்சுகள், நுண்புழுக்களும் எருவாய் புண்ணும் போம்.

CHEMICAL CONSTITUENTS:

Embelin, Quercitol, Christembine, Tannins, Volatile oil[27]

ACTIONS:

Carminative
Anthelmintic
Stimulant
Alterative

Pharmacological activities:

Anti - inflammatory, diuretic, Anti carcinogenic, Immunostimulant, Antibiotic

Database Vol – V, P – 480

Uses:

Seeds are powdered and used to expel tape worms. Young leaves of the plant combined with ginger are used for gargling in sore throat and apthous ulcers.

திப்பிலி

Botanical name **:** Piper longum

Synonym **:** Charica roxburgii

Family **:** Piperacae

Organoleptic character:

Suvai : Kaarppu
Thanmai **:** Veppam
Pirivu **:** Kaarppu

பொதுக்குணம்:

"ஆசனநோய் தொண்டைநோய் ஆவரண பித்தமுதல்
நாசிவிழி காதிவைநோய் நாட்புழுநோய் வீசிடுவி
யங்கலாஞ்ச னஞ்சிதையும் அம்பாய் அழிவிந்தும்
பொங்கலாஞ்ச நங்கையர்கோட்போல்". **- தேரன் வெண்பா**

இதனால், ஆசனநோய், தொண்டைநோய், பித்தம், மூக்கு-காது, கண்நோய்கள், புழுநோய்கள் ஆகியவை நீங்கும்.

CHEMICAL CONSTITUENTS:

Piperine(4 – 5%), volatile oil, piperlonguminine, piplartine, sesamin, terpenoids, resin, piperundecalidine.[28]

ACTIONS:

Stimulant

Carminative

Alterative

Pharmacological activities:

It works as an analgesic when applied locally.[29]

Anti Inflammatory, anti spasmodic, anti bacterial, immunostimulatory[30]

Uses:

Powdered long pepper administered with honey will relieve cough,cold, asthma, hoarseness of voice and hiccough.

கடுக்காய்

Botanical name **:** Terminalia chebula

Synonyms **:** Terminalia reticulata

English name **:** Inknut, Terminalia myrobalan

Organoleptic character:

Suvai **:** Thuvarppu, inippu, pulippu, kaarppu, kaippu

Thanmai **:** Veppam

Pirivu **:** Inippu

பொதுக்குணம்:

"தாடை கழுத்திக்கி தாலு குறியிவிடப்
பீடை சிலிபதமுற் பேதிமுடம் ஆடையெட்டாத்
தூலமிடி புண்வாத சோணிகா மாலையிரண்
டாலமிடி போம்வரிக்கா யால்".

கடுக்காயினால், கன்னம், கழுத்து, நா, ஆண்குறி, இவ்விடங்களின் நோய்கள், காலடிப்புற்றுநோய், அதிதூலம், இடிப்புண், வாதசோணிதவாதம், காமாலை, தாவர, சங்கமவிடங்கள் இவை போம்.

CHEMICAL CONSTITUENTS:

Tannin45%, anthraquinones, chebulinic acid, chebulagic acid, chebulic acid, ellagic acid, gallic acid. (**Indian Herbal Pharmacopoeia, P – 443)**

ACTIONS:

Laxative
Astringent
Alterative

Pharmacological activities:

Anti oxidant, It is used in Rheumatism.[31]

Uses:

Cold infusion of it is used as a gargle in stomatitis.

Cures Trithodham.

கடுகு

Botanical name **:** Brassica juncea

English name **:** Mustard

Organoleptic character:

Suvai **:** Kaarppu
Thanmai **:** Veppam
Pirivu **:** Kaarppu

பொதுக்குணம்:

“இடிகாச நாசிச்சூ ரீளைகபம் பித்தங்
கடிவாத சீதங் கடுப்போ டுடலிற்
படுகோட்டு நோயென்னும் பங்கிவைக ளைப்புண்
கடுகோட்டு மேன்மருந்து காண்”
“மந்தமயக்கம் வாதம் வாய்நீர்ச் சுழற்றலறு
முந்து சுகப்பிரச வங்களுண்டா மிந்துநுதன்
மானே கிராணிகுன்ம மாறுமுத் தோடமும்போம்
தானே கடுகிற்குத் தான்.” *- அகத்தியர் குணவாகடம்*

இது தலையிடிப்பைத் தரக்கூடிய இருமல், மூக்குநீர் வடிதல், கோழை, வெறி, குடைச்சல், வயிற்றுவலி முப்பிணி,கீல்வாயு, இவைகளை நீக்கும்.

CHEMICAL CONSTITUENTS:

Glucosides - Sinalbin, Sinargin

ACTIONS:

Emetic
Stimulant
Rubefacient
Vesicant
Digestive
Diuretic

Uses:

Powdered mustard mixed with hot water can be given for Hiccough.

It is mixed with honey and can be given for Bronchial Asthma.

Externally it can be applied in the chest for Hiccough.

சுக்கு

Botanical name	**:**	Zingiber officinale
English name	**:**	Dried ginger
Family	**:**	Zingiberaceae

Organoleptic character:

Suvai	**:**	Kaarppu
Thanmai	**:**	Veppam
Pirivu	**:**	Kaarppu

பொதுக்குணம்:

"சூலைமந்தம் நெஞ்செரிப்பு தோடமேப் பம் மழலை
மூலம் இரைப்பிருமல் மூக்குநீர் வாலகப
தோடமதிசாரந் தொடர்வாத குன்மநீர்த்
தோடம் ஆமம் போக்குஞ் சுக்கு". - *அகத்தியர்குணவாகடம்*

சுக்கினால் செரியாமை, மார்பெரிச்சல், புளியேப்பம், வெப்ப இருமல், நீரேற்றம், குன்மம், வயிற்றுப்பிசம், காதுகுத்தல், பாண்டு, வயிற்றுக்குத்தல் போம்.

CHEMICAL CONSTITUENTS:

Indian ginger contains an aromatic volatile oil having a characteristic odour. It contains camphene, phellandrene, zingiberine, cineol and borneol, gingerol a yellow pungent body, an oleoresin-gingerin the active principle, other resins and starch.

B – sesquiphellandrene, gingerdiols, gingerdiacetates are also present.

Indian Herbal Pharmacopoeia P - 443

ACTIONS:

Aromatic
Carminative
Stimulant
Stomachic
Digestive

Pharmacological activities:

Inhibition of Prostoglandin synthesis by the constituents of Ginger is thought to play a role in the Anti – inflammatory activity.

Indian Herbal Pharmacopoeia P - 487

Uses:

Dry ginger is much used as a carminative adjuvant along with black pepper and long pepper under the name of trikaduku.

Ginger is valuable in dyspepsia, flatulence, vomiting,colic spasms and other painful affections of stomach.

கருஞ்சீரகம்

Botanical name : Nigella sativa Linn

English name : Black cumin

Family : Ranunculaceae

Organoleptic character:

Suvai : Kaippu,

Thanmai : Veppam

Pirivu : Kaarppu

பொதுகுணம்:

“கருஞ்சீ ரகத்தான் கரப்பனொடு புண்ணும்
வருஞ்சிராய்ப் பீநிசமு மாற்றும் அருந்தினால்
காய்ச்சல் தலைவலியுங் கண்வலியும் போமுலகில்
வாய்ச்ச மருந்தெனவே வை.”

- **அகத்தியர் குணவாகடம்**

மண்டைக் கரப்பான், புண், உட்சூடு, தலை நோய், கண்ணோய் இவைகளும் சிரங்கு வயிற்றுப் பொருமல், குன்மம், மார்பு வலி, இருமல், வாந்தி, ஓக்காளம், வீக்கம், காமாலை ஆகியவைகளும் கருஞ்சீரகத்தால் நீங்கும்.

ACTIONS:

Carminative
Stomachic
Anthelmintic
Diuretic

Pharmacological activities:

Diuretic, anti microbial, analgesic, anti inflammatory, anti oxidant, anti spasmodic, immunomodulatory.

Database Vol – VI, P - 422

Chemical Constituents:

Seeds also contain rich in unsaturated fatty acids like linoleic acid (50-60%) Oleic acid 20%,saturated fatty acids like palmitic acid, stearic acid present in about <30%. Carvone, d – limonene,cymene, nigellone, melanthin, melanthigenin, nigellidine – indazole, campesterol, citronellyl acetate.

Database Vol – VI, P - 422

Uses:

Powdered form of Black cumin with Vinegar can be taken for deworming process.

வேம்பு

Botanical name : Azadirachta indica

English name : Neem tree

Family : Meliaceae

Organoleptic character:

Suvai : Kaippu

Thanmai : Veppam

Pirivu : Kaarppu

பொதுக்குணம்:

“கிருமிகுட்ட மாந்தங் கெடுவிடஞ்சு ரங்கள்
பொருமியம சூரிகையின் புண்கள் ஒருமிக்க
நிம்பத் திலையிருக்க நீடுலகில் நீங்காமல்
கம்பத் திலையிருக்கக் காண்”

-அகத்தியர் குணவாகடம்

வயிற்றுப்புழு, பெருநோய், மாந்தம், நச்சுசுரம், அம்மைப்புண், சொறி, சிரங்கு ஆகிய இவைகளைப் போக்கும்.

Chemical constituents:

Azadirachtin, Azadirachtol, Azadiradione, Nimolinone, Nimbochalcin, Nimbocetin, Nimbidic acid, Salannin, Salannol

Database Vol – I, P - 291

ACTIONS:

Stimulant
Discutient
Anthelmintic
Spasmogenic
Anti inflammatory
Anti ulcerative
Analgesic
Antibacterial Database Vol – I, P - 292

ஆமணக்கு எண்ணெய்

Botanical name **:** Ricinus communis

English name **:** Castor oil plant

Organoleptic character:

Suvai **:** Kaippu
Thanmai **:** Veppam
Pirivu **:** Kaarppu

பொதுக்குணம்:

“ஆமணக்கு நெய்யால் நலமுண்டாம் யாவர்க்கும்
பூமணக்கு மேனி புரிகுழலே வாய்மணக்கக்
கொள்ளில் வயிறுவிடுங் கோரமுள்ள வாயுவறும்
உள்ளில்வரு குன்மம் மோது” **-அகத்தியர்குணவாகடம்**

இது வயிற்றைக் கழிக்கும். கோர வலி நோய், குன்மம், குடலேற்றம், உடல் கண் செவி மூக்கு வாய் இவைகளிலுண்டாகின்ற எரிச்சல் இவற்றை போக்கும். உடலைப் பொன்னிறமாக்கும்.

CHEMICAL CONSTITUENTS:

Lipids – fixed oil (45 -55), a mixture of triglyceride, triricinolein – which on hydrolysis yields ricinoleic acid which is responsible for its cathartic effect.[32]

ACTIONS:

Laxative

Emollient

Anti inflammatory

Spasmolytic

Uses:

They are useful in Inflammations and rheumatic affections.

(Database volume – 4,P – 123)

புன்னை

Botanical name **:** Calophyllum inophyllum

English name **:** Alexandrian Laurel

Family **:** Guttiferae

Organoleptic character:

Suvai **:** Kaippu

Thanmai **:** Veppam

Pirivu **:** Kaarppu

பொதுக்குணம்:

“புன்னையிலிண் டாநெய்யாற் பொங்குசன்னி பாதமுதன்
மன்னியிலைக் குங்கொடிய வாய்வுமுன் பின்னிசிவும்
பொல்லா வலியினமும் புண்கிருமி யுந்தொலையும்
அல்லார் குழலே அற“ *- அகத்தியர் குணவாகடம்*

இதனால் முப்பிணி பெருவளிநோய்கள், முன்னிசிவு பின்னிசிவு, ஐவகை வலி, புண் புழுக்கள் ஆகிய இவைகளைப் போக்கும்

ACTIONS:

Astringent

Anthelmintic

Emetic

Purgative

Irritant

Rubefacient

Uses:

It is used as an external application for Rheumatism[33]-

நல்லெண்ணெய்

Botanical name : Sessamum indicum

English name : Gingelly oil plant

Organoleptic character:

Suvai : Inippu

Thanmai : Veppam

Pirivu : Inippu

பொதுக்குணம்:

"புத்திநயனக்குளிர்ச்சி பூரிப்பு மெய்ப்புளகஞ்
சத்துவங் கந்தி தனியிளமை மெத்தவுண்டாங்
கண்ணோய் செவிநோய் கபாலவழல் காசநோய்
புண்ணோய்போ மெண்ணெய்யாற் போற்று." - *அகத்தியர்குணவாகடம்*

புத்திக்குத் தெளிவு, விழிகளுக்குக் குளிர்ச்சி, உடல் பூரிப்பு, உடல் வன்மை, கண்ணோய், காதுநோய், தலைக் கொதிப்பு, சொறி, சிரங்கு, புண்.

ACTIONS:

Demulcent

Laxative

Nutritive

Emollient

Uses:

The oil is Bitter, Astringent, useful in vitiated conditions of vatha[34]

வெள்ளுள்ளி

Botanical name : Allium sativum

English name : Garlic

Family : Liliaceae

Organoleptic character:

Suvai	**:**	Kaarappu
Thanmai	**:**	Veppam
Pirivu	**:**	Kaarppu

பொதுக்குணம்:

"சன்னியொடு வாதந் தலைநோவு தாள்வலி
மன்னிவரு நீர்க்கோவை வன்சீதம் அன்னமே
உள்ளுள்ளி கண்பாய் உளைமூல ரோகமும் போம்
வெள்ளுள்ளி தன்னால் வெருண்டு" *-அகத்தியர் குணவாகடம்*

சிறிய கட்டிகள், செவிடு, நாட்பட்ட இருமல், இரைப்பு, வயிற்றுப்புழு இவைகட்கும் முப்பிணி, வளிநோய்கள், ஐயத்தலைவலி, வாய்நோய், நீரேற்றம், சீதக்கழிச்சல், மூலம்

Chemical constituents:

Scordine, diallyl trisulphide, allyl methyl trisulphide, glucofrictan, alliin, allicin, enzyme – alliinase, alltin, allisatin, allixin, allyl alcohol *(Database Vol – VI, P – 158)*

ACTIONS:

Carminative
Stomachic
Tonic
Alterative
Stimulant
Expectorant
Diuretic
Anti inflammatory
Anti arthritic
Anti oxidant
Antibacterial Database Vol – VI, P - 158

Uses:

It is used in Rheumatism, Arthralgia, disorders of Spleen and Liver *(Database Vol – VI, P – 157)*

வசம்பு

Botanical name : Acorus calamus

English name : Sweet flag

Family : Areceae

Organoleptic character:

Suvai : Kaarappu

Thanmai : Veppam

Pirivu : Kaarppu

பொதுக்குணம்:

"பாம்பாதி நஞ்சற் பதப்புண் வலிவிடபாகங் குன்மம்
சும்பா ரிரத்தபித் தம்முக நாற்றம்வன் சூலைசன்னி
வீம்பாம்பை காசம் லபிலீகஞ் சிலிபதம் வீறிருமல்
தாம்பாங் கிருமி யிவையேகு மாசிவ சம்பினையே"

- தேரையர் குணவாகடம்

இதனால் எல்லா நஞ்சுகள், புண் வகைகள், ஐவகைவலி, குன்மம், இரத்தபித்தம், வாய்நாற்றம், சூலை, முப்பிணி, இருமல், ஈரல் நோய்கள், யானைக்கால், நாடாப்புழு ஆகியவை போம்

Chemical constituents:

Asarone, calamenol, calamene, eugenol, methyl eugenol, pinene, camphene, calamol, azulene. Database Vol – I, P - 471

ACTIONS:

Stimulant
Stomachic
Antiperiodic
Carminative
Nauseant
Emetic
Disinfectant
Germicide
Spasmolytic
Hypothermic
Anticonvulsant *- Database Vol – I, P - 471*

Uses:

Plant causes sedative effect. It also reduces pain (Analgesic effect)

பெருங்காயம்

Botanical name : Ferula asafoetida

English name : Asafoetida

Synonyms : Ferula foetida

Family : Umbelliferae

Organoleptic character:

Suvai : Kaippu, karakarappu

Thanmai : Veppam

Pirivu : Kaarppu

பொதுக்குணம்:

“தந்தவே தந்த மூலத்தெழும்பிணி
சருவகாளம் விருச்சிகங்கீடம்மா
மந்தம்வாதம் உதாவர்த்தம் அல்குல்நோய்
மார்பணங்கட்ட குன்மம் மகோதரம்
உந்துகெர்ப்பத்தின் வித்திரஞ்சூலைச்
உதிரப்பூச்சி சிலேத்துமத்துறும்வலி
வந்தமெய்க்கடுப் போடிவைமுற்றுமே
மாநாறுநற் காயங்கிடைக்கினே”. **- தேரன் குணவாகடம்**

இதனால் பல்நோய்கள், பாம்புநஞ்சுகள், மந்தம், ஏப்பம், குன்மம், பெருவயிறு, சூதகச்சூலை இவைகள் போம்.

Chemical constituents:

Organic sulphur compound, volatile oil containing essential oil of garlic-allyl, allylpersulphide and two terpenes, ferulic acid, ester of asaresino-tannol, alsomali, acetic, formic & valerainic acids.

ACTIONS:

Stimulant

Anti spasmodic

Anthelmintic

Emmenagogue

Expectorant

Nervine tonic[35]

Uses:

It is used as anthelmintic for round worms in children, typhoid fever, cholera, convulsions and flatulent diseases of children.

மிளகு

Botanical name **:** Piper nigrum

English name **:** Black pepper

Family **:** Piperaceae

Organoleptic character:

Suvai **:** Kaippu, kaarppu

Thanmai **:** Veppam

Pirivu **:** Kaarppu

பொதுக்குணம்:

“சீதசுரம் பாண்டு சிலேத்மங் கிராணிகுன்மம்
வாதம் அருசிபித்தம் மாமூலம் ஓதுசன்னி
யாசமபஸ் மாரம் அடன்மேகம் காசமிவை
நாசங் கறி மிளகினால் “.

- அகத்தியர் குணவாகடம்

இதனால், குளிர்சுரம், பாண்டு, கோழை, குன்மம், வாயு, சுவையின்மை, மூலம், சன்னி, இருமல் ஆகியவை போகும்.

CHEMICAL CONSTITUENTS:

A volatile alkaloid piperine or pipirine 5-9%, piperidine or piperidin 5%, abalsamic volatile essential 1-2%, fat7%.

Mesocarp contains chavicin, a balsamic volatile oil, starch, gum.

Piperine, Piperrttine, Piperanine, Pipericide Sarmentine, Eugenol,

Indian Herbal Pharmacopoeia, P – 321

ACTIONS:

Carminative

Pungent

Antiperiodic

Analgesic

Anti inflammatory

Anti - oxidant - *Indian Herbal Pharmacopoeia, P – 324*

Cyclooxygenase inhibitory activity - *Database, Vol – 190*

Uses:

It is useful in dyspepsia and flatulence in doses of 10-15 grains of the powder and in haemorrhoids in form of confection. It is a useful ingredient in tooth powder.

ஓமம்

Botanical name **:** Carum copticum

Synonyms **:** Tachyspermam ammi

English name **:** Bishops weed

Family **:** Solanacae

Organoleptic character:

Suvai **:** Kaarppu

Thanmai **:** Veppam

Pirivu **:** Kaarppu

பொதுக்குணம்:

“சீதசுரங் காசஞ் செரியாமந் தம்பொருமல்
பேதியிரைச் சல்கடுப்பு பேராமம் ஓதிருமல்
பல்லொடுபல் மூலம்பசுமிவைநோ யென்செயுமோ
சொல்லொடு போம் ஓமமெனச் சொல் ”.

-அகத்தியர் குணவாகடம்

இதனால், சீதசுரம், இருமல், செரியாமாந்தம், பொருமல், கழிச்சல், இரைப்பு, பல் நோய், இவைகள் போம்.

CHEMICAL CONSTITUENTS:

The chemical composition of essential oil obtained from dry fruits of carum.

Thymol (35-60), further more, a-pinene, p-cymene, limonene and a-terpinene have been found.

Camphene, Carvacrol, cymene, dipentene, myrcene, phenols, terpinene, thymene, thymol, linoleic acid. ***- Database, Vol – VII, P - 498***

ACTIONS:

Carminative

Stimulant

Stomachic

Anti spasmodic

Tonic

Antimicrobial

Diuretic

Antispamodic

USES:

A paste of the crushed fruit is applied externally for relieving colic pains *(Database, Vol – VII, P – 497 – 498)*

கிராம்பு

Botanical name **:** Syzygium aroamaticum

Family **:** Myrtaceae

Organoleptic character:

Suvai **:** Kaarappu

Thanmai **:** Veppam

Pirivu **:** Kaarppu

பொதுக்குணம்:

"பித்த மயக்கம் பேதியொடு வாந்தியும்போம்
சுத்தவிரத் தக்கடுப்புந் தோன்றுமோ மெத்த
இலவங்கங் கொண்டவருக் கேற் சுகமாகும்
மலமங்கே கட்டுமென வாழ்த்து" *-அகத்தியர் குணவாகடம்*

இது மயக்கம், பேதி, வாந்தி, குருதிகழிச்சல், நாட்பட்ட கழிச்சல், எருவாய்கடுப்பு, செவிநோய், சிவந்தமச்சம், கறுத்த மச்சம், கண்ணில் பூ, படைகள் ஆகியவற்றை நீக்கும்.

Chemical constituents:

Volatile oil, eugenol, acetate, caryophyllene, humulene, acetophenone, cardinal, hexanol, muuvolene, palustrol *-Indian Herbal Pharmacopoeia, P - 424*

ACTIONS:

Stimulant

Stomachic

Antiperiodic

Carminative

Nauseant

Emetic

Disinfectant

Germicide

Antioxidant

Anti convulsant

Radical scavenging activity

Rejuvenating *- Database, Vol – IV, P – 359 – 360*

Uses:

Externally the oil is used as an application for rheumatic pains, headache, neuralgia. *- Database, Vol – IV, P – 359 - 360*

சதகுப்பை

Botanical name : Anethum graveolens

English name : Gardendill

Family : Apiaceae

Organoleptic character:

Suvai : Inippu**,** Kaarappu

Thanmai : Veppam

Pirivu : Kaarppu

பொதுக்குணம்:

“வாதமொடு சூதிகா வாதம் சிரசுநோய்
மோதுசெவி நோய்கபநோய் மூடுசுரம் ஓதுகின்ற
மூலக் கடுப்பு முதிர்பீனிசம் போகும்
ஞாலச் சதகுப்பை நாடு” -அகத்தியர் குணவாகடம்

இதனால் வளி நோய், குருதிபோக்கு, தலைவலி, காதுவலி, மூக்குநீர்பாய்தல், கீழ்வாய்க்கடுப்பு நீங்கும்.

ACTIONS:

Carminative

Deobstruent

Diuretic

Stimulant

Stomachic

Anti inflammatory

Antispasmodic

Uses:

They are used in arthralgia and inflammation of joints.[36]

கடுகுரோகிணி

Botanical name : Picrorhiza scrophulariiflora

English name : Picorrhiza

Family : Scrophulariaceae

Organoleptic character:

Suvai : Kaippu, Kaarappu

Thanmai : Veppam

Pirivu : Kaarppu

பொதுக்குணம்:

“மாந்தஞ் சுரமையம் வாயுகரப் பானாமஞ்
சேர்ந்தமலக் கட்டு திரிதோடம் போந்தபொட்டுப்
புண்வயிறு நோயிவைபோம் பொற்கொடியே பேதியுண்டாம்
திண்கடுகு ரோகணிக்குத் தேர்.” ***- அகத்தியர் குணவாகடம்***

மாந்தம், சுரம், ஐயப் பெருக்கு, கரப்பான், சீதக் கழிச்சல், வயிற்றுவலி, புண்கள், வளி நோய்கள் என்னும் இவைகள் போம்.

Chemical Constituents:

Iridoid glycosides, picroside I and kutkoside *(Indian Herbal Pharmacopoeia – Revised Edition - 2, P – 296)*

ACTIONS & USES:

Antiperiodic

Cathartic

Stomachic

Anthelmintic

Antioxidant

Indian Herbal Pharmacopoeia - Revised Edition - 2, P – 296

It is used as a Laxative **- Database, Vol – 7, P - 180**

MATERIALS AND METHODS

STUDY DESIGN **:** A Pilot study.

STUDY PLACE **:** Ayothidoss Pandithar Hospital, National Institute of Siddha, Tambaram Sanatorium, Chennai-47.

STUDY PERIOD **:** 12 months

SAMPLE SIZE **:** 40 patients

(20 - OP; 20 - IP -10 with trial medicines, 10 with Varmam along with trial medicine)

TRIAL DRUGS:

INTERNAL DRUG: MAHA ANALURUVA CHOORANAM:

(**Reference:** Agathiyar Vaithiya Vallathi 600)

Ingredients

Kodiveli ver (Plumbago zeylanica)	1 balam (35 grams)
Pungu ver (Pongamia glabra root)	1 balam (35 grams)
Aayil pattai (Haloptelia integrifolia stem and root bark)	1 balam (35 grams)
Vaaividangam (Emblia ribes)	½ balam (17.5grams)
Thippili (Piper longum)	½ balam (17.5grams)
Kadukkkaai (Terminalia chebula)	½ balam (17.5grams)
Kadugu (Brassica juncea)	½ balam(17.5 grams)
Chukku (Zingiber officinale)	½ balam(17.5grams)
Karunjeeragam (Nigella sativa)	½ balam(17.5 grams)

Dose : Verugadi (1.5 grams) b.i.d

Adjuvant : Honey.

Duration : 48 days

Source of raw drugs:

The required raw drugs are purchased from authorized centers and standardized before preparing medicines. The raw drugs will be authenticated and then they are purified and the medicines are prepared in Gunapadam laboratory of National Institute of Siddha.

Purification of raw drugs:

Thippili (Piper longum): It is soaked in lemon juice.

Inji (Zingiber officinale): It is soaked in lime stone water

Vaividangam (Emblia ribes): It is dried in sunlight

Kadukkai (Terminalia chebula): The seeds are taken off and the outer portion is used.

Kadugu (Brassica juncea) : It is dried in sunlight for 2 days

Karujeeragam (Nigella sativa) : It is dried in sunlight and is then roasted

Kodiveli (Plumbago zeylanica) : Inner nerve of the bark is removed and the bark alone is powdered. The above said powder is taken in a broad mouthed vessel containing cow's milk, closed with another broad mouthed vessel, subjected to heat for three hours. The resultant powder is again finely powdered in a Kalvam and then taken

Pungu (Pongamia glabra) (root bark) : It is cleaned with a cloth and its outer portion is scratched off.

Aayil Pattai -stem bark (Haloptelia integrifolia) : It is cleaned with a cloth and its outer portion is scratched off.

Aayil Pattai - roots (Haloptelia integrifolia) : It is washed in purified river water. - *Reference: Sikitcha Ratna Deepam, Sarakku Suthi Muraigal*

Preparation:

35 grams each of Kodiveli ver (Plumbago zeylanica), Pungu ver (Pongamia glabra root), Aayil pattai (Haloptelia integrifolia stem and root bark) are taken. They are dried in shade and then made into fine powder.

17.5 gms. of Vaaividangam(Emblia ribes), Thippili(Piper longum), Kadukkkaai (Terminalia chebula), Kadugu(Brassica juncea), Chukku(Zingiber officinale), Karunjeeragam(Nigella sativa) are taken and roasted. Then they are made into a fine powder. This powder is then mixed with the above mentioned powder.

Drug storage:

The trial drug Chooranam is stored in clean dry air tight container and it is dispensed to the patients in packets.

EXTERNAL DRUG: PUNGAN ENNAI

(Reference: Gunapadam Mooligai Vaguppu)

Ingredients:

1.	Pungan oil	(Oil of Pongamia glabra)	700 ml
2.	Vaeppam oil	(Oil of Azadirachta indica)	700 ml
3.	Aamanakku oil	(Oil of Ricinus communis)	700 ml
4.	Punnai oil	(Oil of Calophyllum inophyllum)	700 ml
5.	Gingelly oil	(Oil of Sessamum indicum)	700 ml
6.	Velluli	(Allium sativum)	17 gms
7.	Vasambu	(Acorus calamus)	17 gms
8.	Perungkayam	(Ferula asafoedita)	17 gms
9.	Chukku	(Zingiber officinale)	17 gms
10.	Milagu	(Piper nigrum)	17 gms
11.	Thippili	(Piper longum)	17 gms
12.	Omam	(Carum capticum)	17 gms
13.	kirambu	(Syzium aromaticum)	17 gms
14.	Sadha kuppai	(Anethom graveolens)	17 gms
15.	Kadugu rogini	(Piccorhiza kurroa)	17 gms
16.	Sitthira moolam	(Plumbago zeylanica)	17 gms

Method of Preparation:

Pungan oil, Vaeppam oil, Aamanakku oil, Punnai oil, Gingelly oil are taken and mixed well in a big container. The raw drugs (listed from 6 to 16) were powdered and then mixed well with Kaadi (Vinegar). This mixture is added with the above oil. Then 2800 ml of Kaadi is added with the above mixture and subjected to heat till it attains the consistency (Patham) of Mezugu. After that the oil is filtered and stored. This oil is used externally for vatha diseases.

Indications:

It is indicated externally for 80 types of Vatha diseases, Megam, Soolai, Isivu, Soothaga vali..

Drug storage:

The trial drug is stored in clean dry air tight container and it is given to the patients in disposable pet bottles.

VARMAM THERAPY:

Varmam points indicated for Ceganavatham:

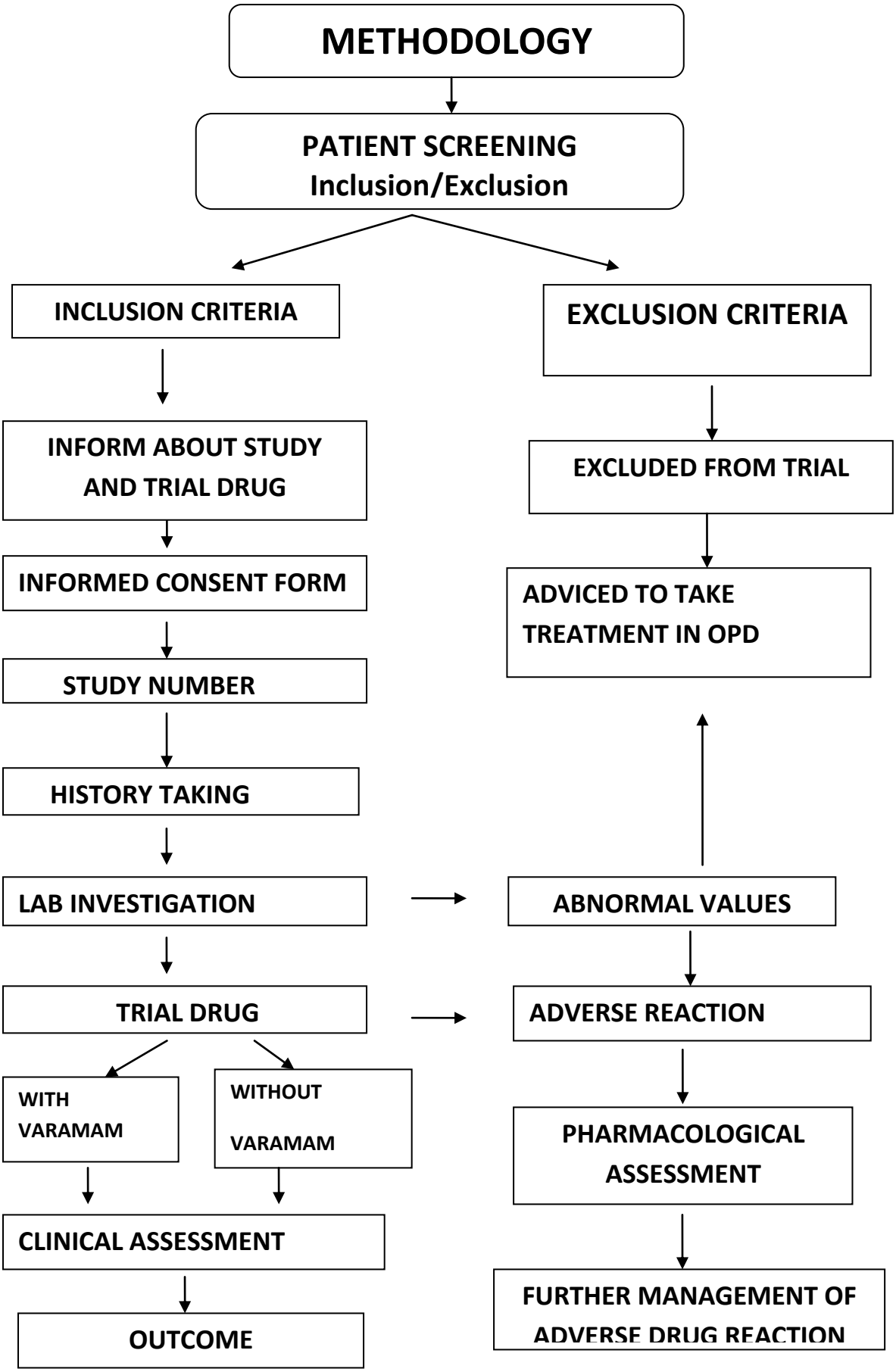
- Muduchi Varmam (Varma odivu murivu sara soothiram - 1200)
- Kakkattai Kaalam (Varma Beerangi – 100)
- Manibanthaga Varmam (Varma Beerangi – 100)
- Kai viral madakku Varmam (Varma vilakkam)
- Kavuli Kaalam (Varma soothiram – 101)

ETHICAL CLEARANCE:

After the trial drugs were chosen, they were scrutinized by the Institutional Ethical Committee for ethical clearance.

ETHICAL ISSUES:

1. To prevent any infection, while collecting blood samples from the patient, only disposable syringes, disposable gloves, with proper sterilization of laboratory equipments will be used.
2. There will be no infringement on the rights of patient.
3. The data collected from the patient will be kept confidential.
4. The patient will be informed about the disease and other details of the treatment.
5. After obtaining the written consent of the patient (through consent form in their vernacular language) they will be enrolled in the study.
6. Treatment would be provided free of cost.
7. In case of any adverse reactions, the patients will be referred to the OPD of National Institute of Siddha for further management.
8. The patient will be allowed to withdraw from this trial if he or she is not satisfied with this treatment and procedures.


METHODOLOGY
PATIENT SCREENING
Inclusion/Exclusion
INCLUSION CRITERIA
EXCLUSION CRITERIA
INFORM ABOUT STUDY AND TRIAL DRUG
EXCLUDED FROM TRIAL
INFORMED CONSENT FORM
ADVICED TO TAKE TREATMENT IN OPD
STUDY NUMBER
HISTORY TAKING
LAB INVESTIGATION
ABNORMAL VALUES
TRIAL DRUG
ADVERSE REACTION
WITH VARAMAM
WITHOUT VARAMAM
PHARMACOLOGICAL ASSESSMENT
CLINICAL ASSESSMENT
FURTHER MANAGEMENT OF ADVERSE DRUG REACTION
OUTCOME

STUDY ENROLLMENT:

Patients reporting at the OPD of Ayothidoss Pandithar Hospital of National Institute of Siddha with clinical features of pain in nape radiating to upper limbs, stiffness were chosen for the enrollment based on the inclusion criteria.

The patients who were enrolled were informed (Form VII) about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understandable to them. The informed consent were obtained in writing from them in the consent form (Form V).

Unique registration cards were given to all the patients in which the patients Registration number, Address, Phone number and Doctors phone number etc. will be given, so as to report easily if any complications arise.

Complete clinical history, complaints, duration, examination findings and laboratory investigations -- were recorded in the prescribed Proforma.

Screening Form- I was filled initially. Form –II, Form –III and Form – IV were used for recording the patients history, clinical examination of symptoms, signs and laboratory investigations respectively. Patients were advised to take the trial drug and appropriate dietary advice were given according to the patients perfect understanding.

CONDUCT OF THE STUDY:

The trial drugs Maha Analuruva Chooranam (Internal) and Pungan Ennai (External) were given for 48 days. Purgation with Agasthiyar kuzhambu – 200 mg with palm jaggery was given at early morning one day before the treatment for balancing the deranged mukkuttram. Among the 20 subjects in IPD 10 were given varmam therapy additionally. The clinical assessment was made daily and recorded in the appropriate forms for all subjects. For subjects visiting the OPD, the trial drugs were given and they were asked to have regular follow-up in the OPD once in 7 days. In every visit, the clinical assessment was recorded. The laboratory investigations were done before and after the treatment and was recorded. If any trial subject failed to collect the trial drug on prescribed day, but wanted to continue in the trial from next day or two he/she was allowed. Defaulters for one week were not allowed to continue and were withdrawn from the study. At the end of the treatment the subjects were advised to have follow-up visits in the OPD for 2 more months.

DATA MANAGEMENT:

After enrolment of the subjects in the study, a separate file was maintained for each subject and all the forms were filed. Study number was entered on the top of the file for easy recognition. Whenever the subjects visited OPD during the study period, required entries were made in the assessment forms.

The data entries were monitored by the Head of the Department and Department of Pharmacovigilance for detecting occurrence of any adverse reactions.

All the forms were further scrutinized in presence of investigations by Sr. Research Officer (Statistics) for logical errors and incompleteness of data to avoid any bias. No modifications in the results were permitted for unbiased reports. Finally the outcome was assessed.

DATA COLLECTION FORMS:

Required information was collected from each patient by using following forms:

FORM I **:** Screening and selection proforma

FORM lI **:** History proforma on enrollment

FORM lll **:** Clinical assessment proforma

FORM lV **:** Laboratory investigations on enrollment and conclusion of trial

FORM V **:** Consent form

FORM VI **:** Withdrawal form

FORM VII **:** Patient information sheet

FORM VIII **:** Drug Compliance Form

FORM IX **:** Dietary advice form

FORM X **:** Adverse reaction form

THE CLINICAL ASSESSMENT AND OUTCOME WERE ASSESSED BASED ON THE FOLLOWING:

TESTS AND ASSESMENTS

1. Clinical assessment
2. Routine investigations
3. Specific investigations

Clinical assessment:

Pain in nape

Radiating pain in upper limbs

Tenderness

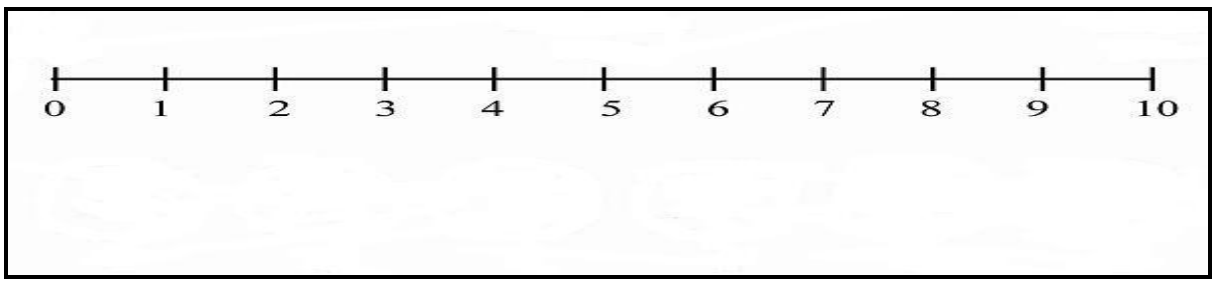
Numbness

Stiffness of neck and restriction of movements

Giddiness

PAIN ASSESMENT:

Universal Pain Assessment Scale



A. 0 : No Pain

B. 1 -3 : Mild pain

C. 4-6 : Moderate pain

D. 7-10 : Severe pain[37]

GRADATION:

1. Grade 1 - Fit for all activities and to do the works without support (Normal).
2. Grade 2 - Mild pain and mild restriction of movements.
3. Grade 3- Moderate pain with or without radiation to upper limbs and moderate restriction of movements.
4. Grade 4 - Severe pain with or without radiation to upper limbs and severe restriction of movements.

ROUTINE TESTS AND INVESTIGATION:

INVESTIGATIONS BASED ON SIDDHA SYSTEM

Envagai Thervu:

1. Naadi
2. Sparisam
3. Naa
4. Niram
5. Mozhi
6. Vizhi
7. Malam
8. Moothiram
    - Neerkkuri:
    - Neikkuri:

Blood:

TC, DC, ESR, Hb, TRBC

Blood Sugar

Fasting

Post prandial

Serum Uric acid

Serum Calcium

Serum Phosphorus

Renal function tests:

Blood urea

Serum creatinine

Lipid profile:

HDL, LDL, VLDL

Total Cholesterol & TGL

Liver Function tests:

SGOT

SGPT

Alkaline Phosphatase

Total Protein

Albumin

Globulin

Serum Bilirubin

Total, Direct & Indirect

Serology:

C - reactive protein

RA factor

ASO titre

Urine:

Albumin

Sugar

Deposits

SPECIFIC INVESTIGATIONS:

X- Ray: Cervical spine - AP, Lateral and Oblique view

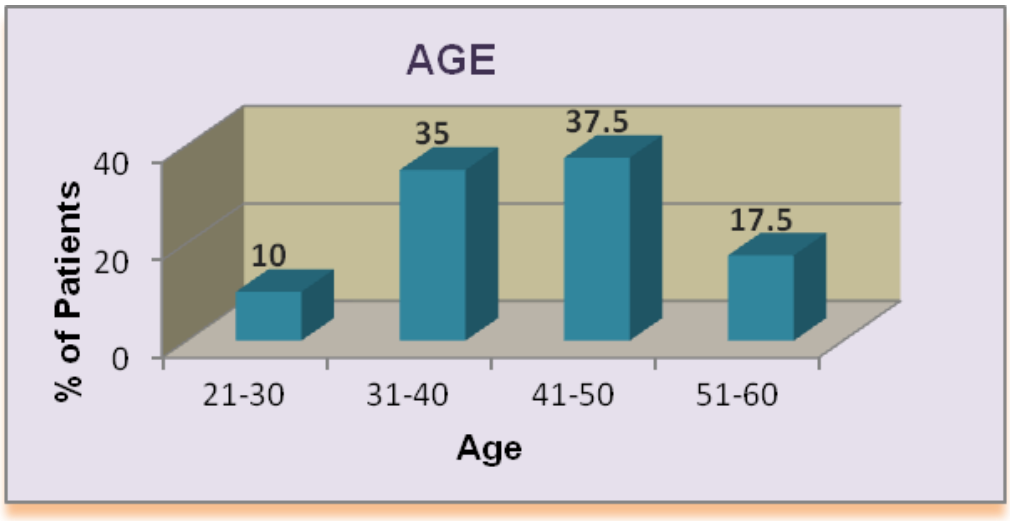
OBSERVATIONS AND RESULTS

Results and observations of various categories are presented mentioned as under:

1. Age
2. Gender
3. Profession
4. Society Role
5. Paruva Kaalam (Seasonal changes)
6. Thinai
7. Derangement of kanmenthriyam
8. Derangement of Vaatham
9. Derangement of Pitham
10. Derangement of Kabam
11. Udal Thathukkal
12. Envagai Thervugal
13. Naadi
14. Neikkuri analysis
15. Duration of Illness
16. Clinical features
17. Progress due to the treatment
18. Enhancement due to the varmam treatment(10 Patients)

1. AGE:

AGE	PATIENTS	
	NO	PERCENTAGE
21-30	4	10
31-40	14	35
41-50	15	37.5
51-60	7	17.5
Total	40	100

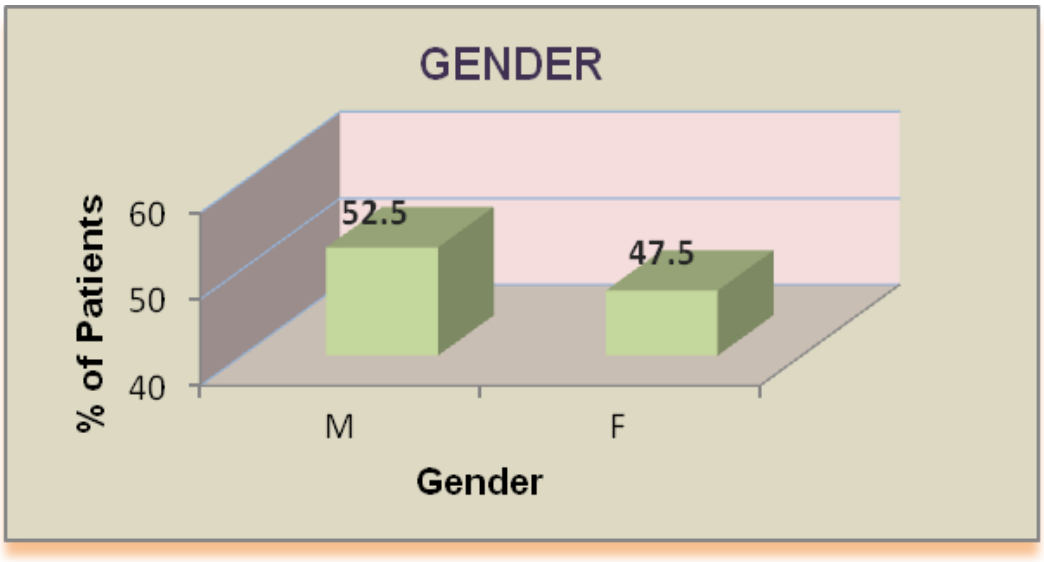


Inference:

Among the 40 patients recruited for trial, people of age group between 41-50 years had more occurrence of the disease.

2. GENDER:

GENDER	PATIENTS	
	NO	PERCENTAGE
M	21	52.5
F	19	47.5
Total	40	100

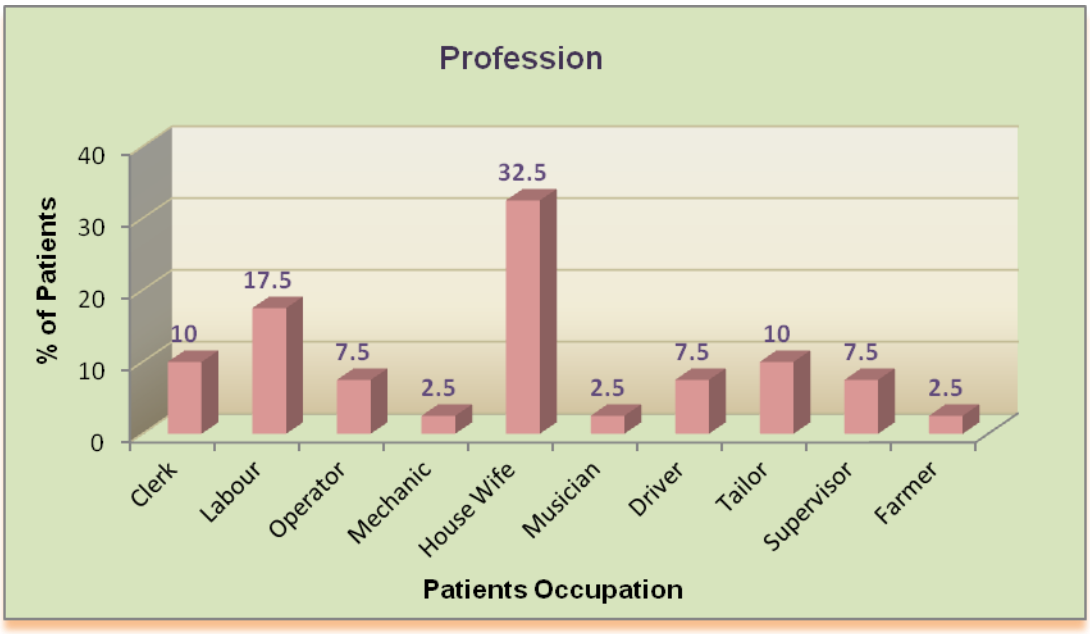


Inference:

Among the 40 patients recruited for trial, Male (52.5%) had more occurrence of the disease.

3. PROFESSION:

PROFESSION	PATIENTS	
	NO	PERCENTAGE
Clerk	4	10
Labour	7	17.5
Operator	3	7.5
Mechanic	1	2.5
Home maker	13	32.5
Musician	1	2.5
Driver	3	7.5
Tailor	4	10
Supervisor	3	7.5
Farmer	1	2.5
Total	40	100

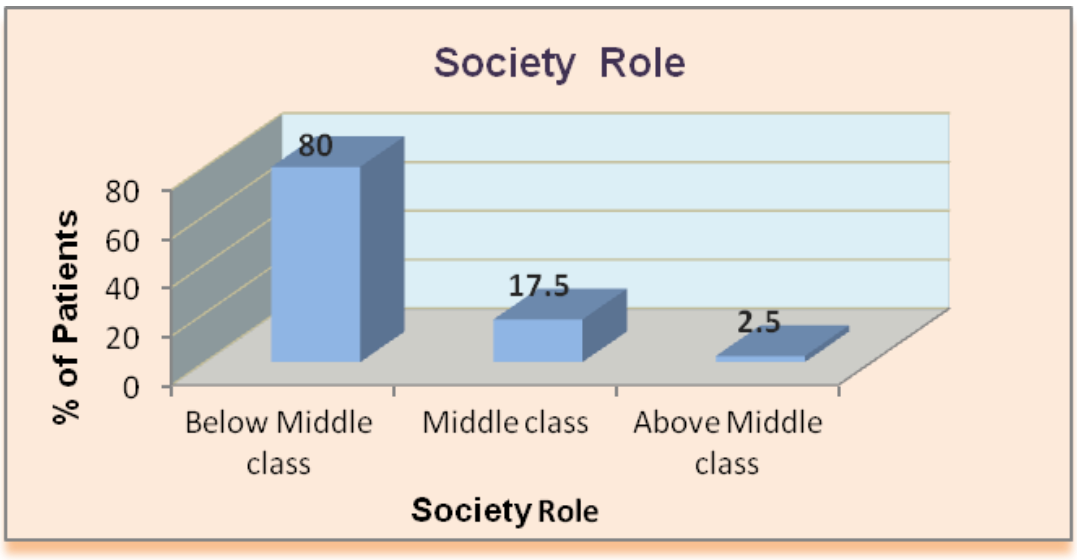


Inference:

Among the 40 patients recruited for trial, mostly home makers (32.5%) had more occurrence of disease.

4. SOCIETY ROLE:

SOCIETY ROLE	PATIENTS	
	NO	PERCENTAGE
Below Middle class	32	80
Middle class	7	17.5
Above Middle class	1	2.5
Total	40	100

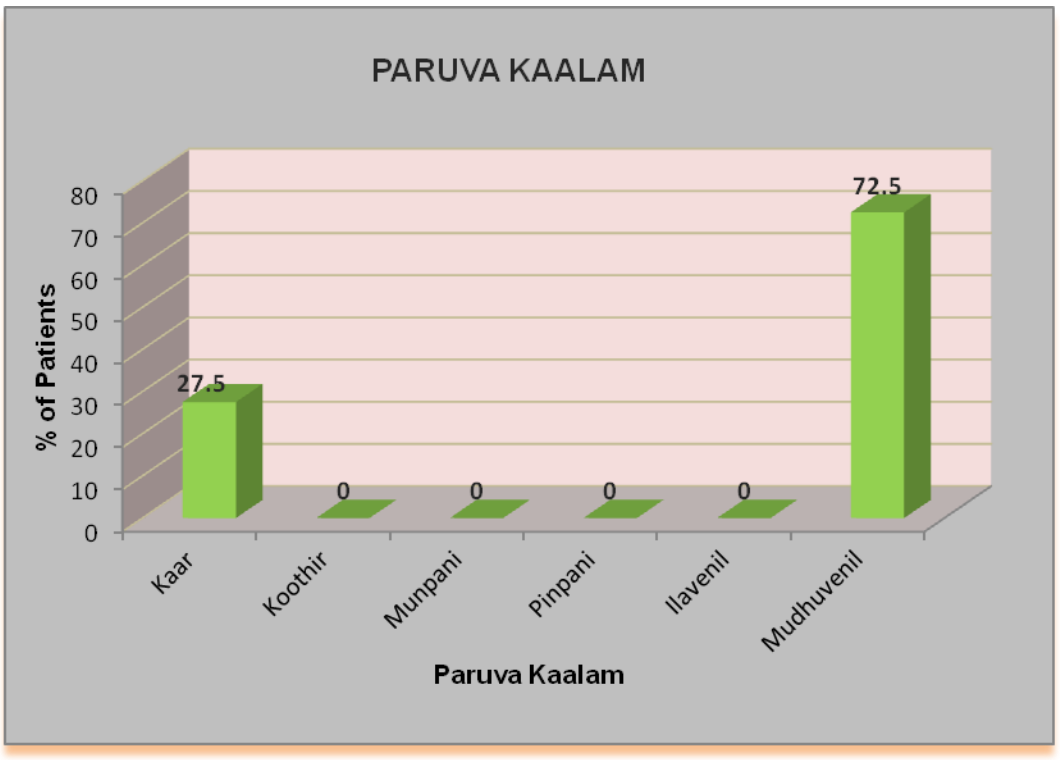


Inference:

Among the 40 patients recruited for trial, below middle class people had more occurrence of the disease.

5. PARUVA KAALAM

PARUVA KAALAM	PATIENTS	
	NO	PERCENTAGE
Kaar	11	27.5
Koothir	0	0
Munpani	0	0
Pinpani	0	0
Ilavenil	0	0
Mudhuvenil	29	72.5

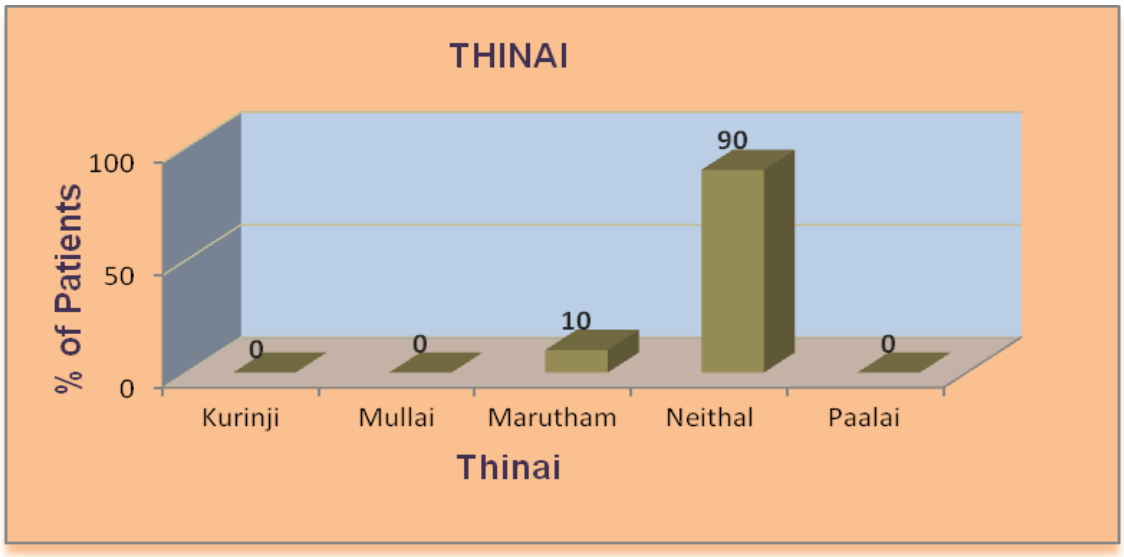


Inference:

72.5% patients among 40 got admitted during Mudhuvenil kalam and 27.5% patients during kaarkalam. No patients got admitted in other seasons.

6. THINAI:

THINAI	PATIENTS	
	NO	PERCENTAGE
Kurinji	0	0
Mullai	0	0
Marutham	4	10
Neithal	36	90
Paalai	0	0
Total	40	100



Inference:

90% of patients among 40 admitted were from Neithal thinai and 10% from Marutham thinai. No patients got admitted in other thinais.

7. KANMENTHIRIYAM:

KANMENTHIRIYAM	PATIENTS		PATIENTS RELIEVED FROM SYMPTOMS
	BEFORE TREATMENT	AFTER TREATMENT	
Kai	40	1	39
Kaal	3	1	2
Vai	0	0	0
Eruvai	7	2	5
Karuvai	3	3	0

Inference:

Kai was affected in all the 40 patients, 39 got relieved from symptoms after treatment. Kaal was affected in 3 patients, 2 got relieved from symptoms after treatment. Eruvai was affected in 7 patients, 5 got relieved from symptoms after treatment.

8. DISTURBANCES IN VAATHAM:

VAATHAM	PATIENTS AFFECTED		PATIENTS RELIEVED FROM SYMPTOMS
	BEFORE TREATMENT	AFTER TREATMENT	
Praanan	0	0	0
Abaanan	7	2	5
Samaanan	40	3	37
Udhaanan	0	0	0
Viyaanan	40	3	37

Inference:

Among the 40 patients observed, Viyaanan and Samaanan were affected in almost all the patients, while Abaanan was affected in 7 patients before treatment. After treatment Viyaanan and Samaanan remained affected in 3 patients and Abaanan in 2.

9. PITHAM:

PITHAM	PATIENTS AFFECTED	
	BEFORE TREATMENT	AFTER TREATMENT
Analakam	1	1
Ranjakam	3	3
Saathakam	40	10
Prasakam	0	0
Aalosakam	0	0

Inference:

Saathagam was affected in 40 patients before treatment, 30 got relieved from symptoms after treatment.

10. KABAM:

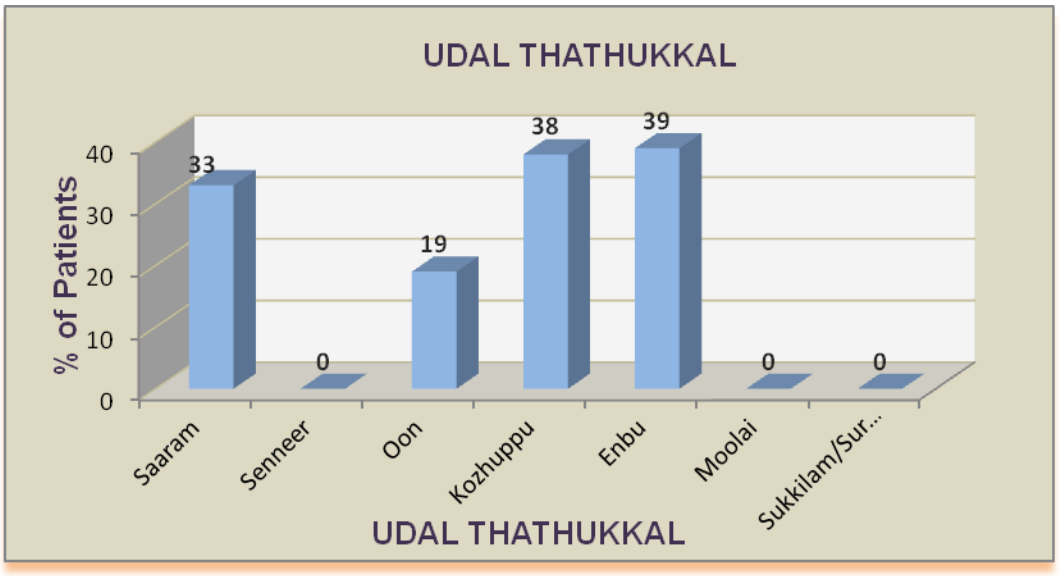
KABAM	PATIENTS AFFECTED	
	BEFORE TREATMENT	AFTER TREATMENT
Avalambagam	0	0
Kilethagam	0	0
Pothagam	0	0
Tharpagam	0	0
Santhigam	40	1

Inference:

Santhigam was affected in all the 40 patients. 39 patients got relieved after treatment.

11. UDAL THATHUKKAL:

UDAL THATHUKKAL	PATIENTS AFFECTED	
	BEFORE TREATMENT	AFTER TREATMENT
Saaram	40	7
Senneer	5	5
Oon	21	2
Kozhuppu	40	2
Enbu	40	1
Moolai	0	0
Sukkilam/Suronitham	2	2



Inference:

Kozhuppu and Enbu were affected in all the 40 subjects (100%). 38 Patients got relieved from Kozhupu and 39 patients got relieved from Enbu after treatment.

12. ENVAGAI THERVUGAL

ENVAGAI THERVUGAL	PATIENTS AFFECTED		PATIENTS RELIEVED FROM SYMPTOMS
	BEFORE TREATMENT	AFTER TREATMENT	
Niram	0	0	0
Naa	12	12	0
Mozhi	0	0	0
Vizhi	7	7	0
Malam	6	4	2
Neer	0	0	0
Sparisam	0	0	0

Inference:

There was no change in Niram, Naa, Mozhi and Sparisam. Malam (Constipation) got reduced in 2 patients.

13. NAADI

NAADI	PATIENTS	
	NO	PERCENTAGE
Pithavatham	16	40
Vathapitham	7	17.5
Kabapitham	6	15
Kabavatham	9	22.5
Pithakabam	2	5
Total	40	100

Inference:

Among 40 patients, 40% patients had Pithavatham, 17.5% had Vathapitham, 15% had Kabapitham, 22.5% has Kabavatham and 5% had Pithakabam nadi.

14. NEIKKURI:

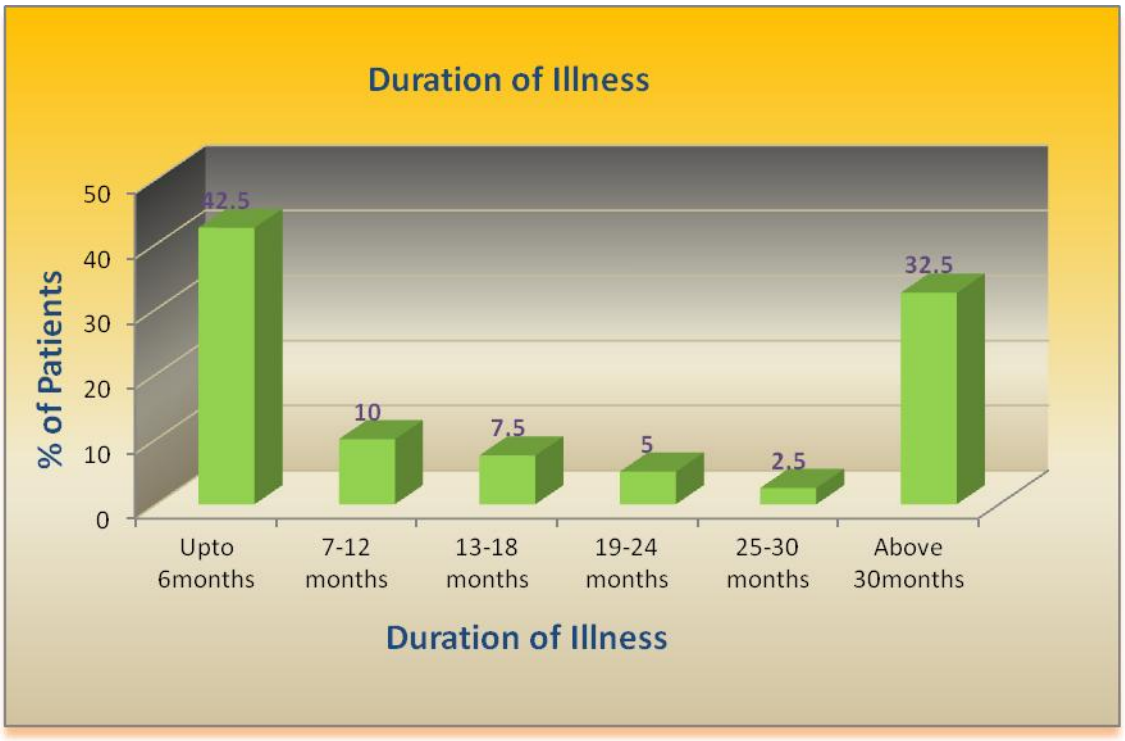
SPREADING PATTERN	PATIENTS	
	NUMBER	PERCENTAGE
Aravena Neendathu (Vatha Neer) (Snake like pattern)	1	2.5
Aazhipol Paraviathu (Pitha neer) (Annular/Ringed pattern)	20	50
Muththothu Ninrathu (Kaba neer) (Pearl beaded pattern)	19	47.5
Total	40	100

Inference:

Among 40 patients, 50% patients had Pitha neer, 47.5% had Kaba neer and 2.5% had Vatha neer.

15. DURATION OF ILLNESS:

DURATION OF ILLNESS	PATIENTS	
	NUMBER	PERCENTAGE
Upto 6months	17	42.5
7-12 months	4	10
13-18 months	3	7.5
19-24 months	2	5
25-30 months	1	2.5
Above 30months	13	32.5
Total	40	100

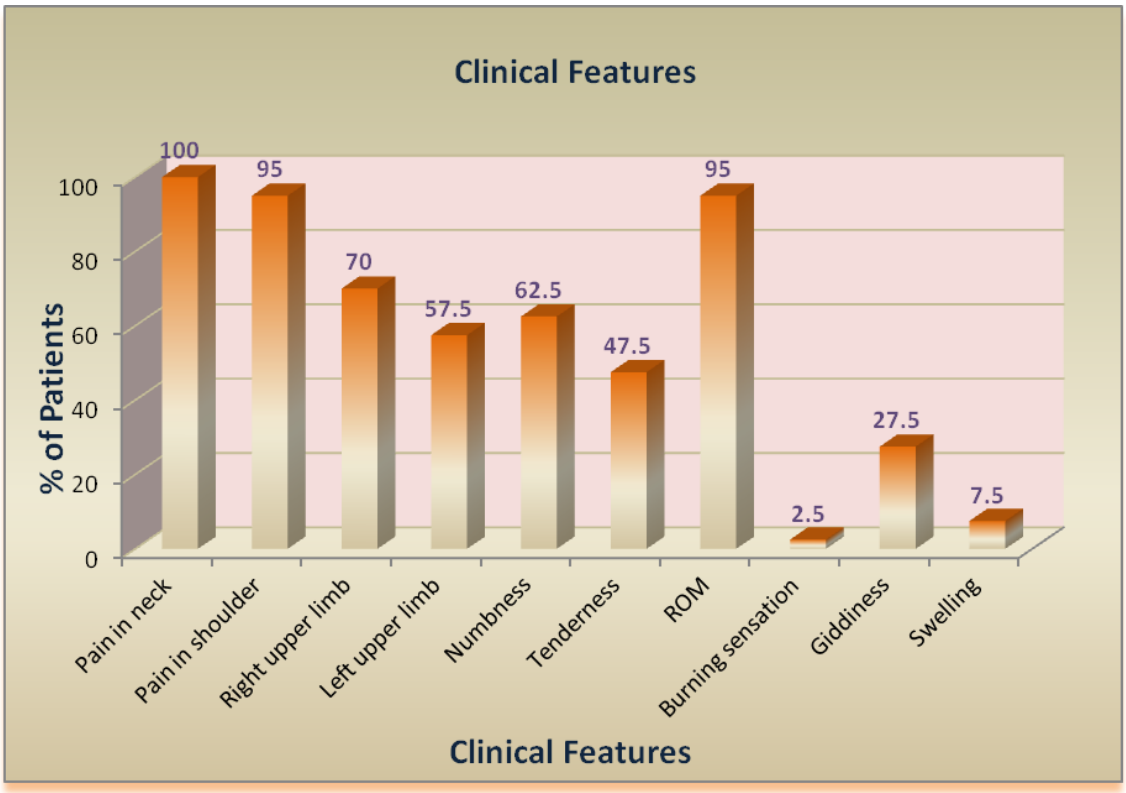


Inference:

In 42.5% of patients, the duration of illness was upto 6 months, 10% patients had illness for about 7-12 months, 7.5% patients had illness for about 13-18months, 5% subjects had illness for about 19-24 months, 2.5% had illness for about 25-30months and 32.5% of patients had illness more than 30months.

16. CLINICAL FEATURES:

CLINICAL FEATURES	PATIENTS	
	NUMBER	PERCENTAGE
Pain in neck	40	100
Pain in shoulder	38	95
Radiating pain in the right upper limb	28	70
Radiating pain in the left upper limb	23	57.5
Numbness	25	62.5
Tenderness	19	47.5
Restriction of movements(ROM)	38	95
Burning sensation	1	2.5
Giddiness	11	27.5
Swelling	3	7.5

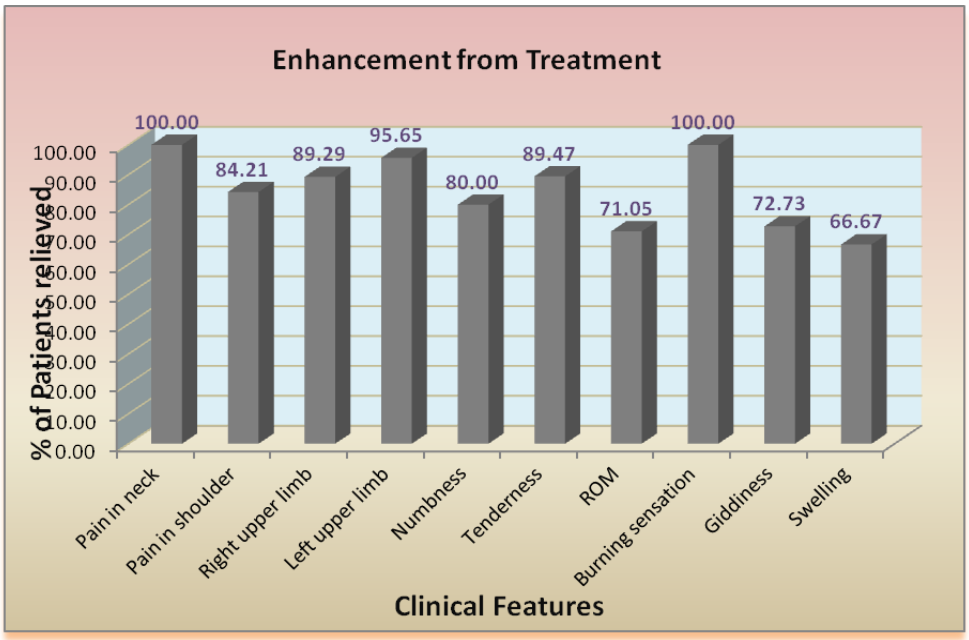


Inference:

All the 40 patients had pain in their neck.

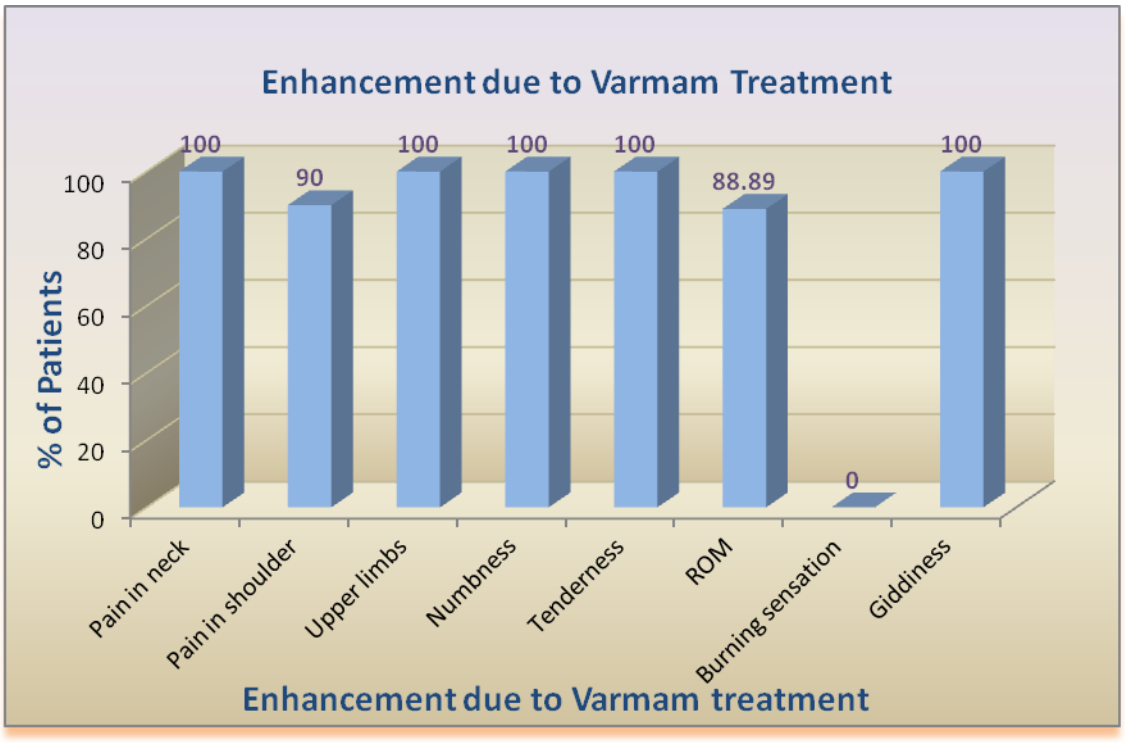
17. PROGRESS:

CLINICAL FEATURES	PATIENTS		
	BEFORE TREATMENT	AFTER TREATMENT	% OF SUBJECTS RELIEVED FROM SYMPTOMS
Pain in neck	40	0	100
Pain in shoulder	38	6	84.21
Radiating pain in the right upper limb	28	3	89.29
Radiating pain in the left upper limb	23	1	95.65
Numbness	25	5	80
Tenderness	19	2	89.47
Restriction of movements(ROM)	38	11	71.05
Burning sensation	1	0	100.0
Giddiness	11	3	72.73
Swelling	3	1	66.67



18. ENHANCEMENT IN PATIENTS TREATED WITH VARMAM ALONG WITH TRIAL DRUGS (IN 10 SUBJECTS):

CLINICAL FEATURES	PATIENTS		
	BEFORE TREATMENT	AFTER TREATMENT	% OF SUBJECTS RELIEVED FROM SYMPTOMS
Pain in neck	10	0	100
Pain in shoulder	10	1	90
Upper limbs	10	0	100
Numbness	7	0	100
Tenderness	8	0	100
ROM	9	1	88.89
Burning sensation	0	0	0
Giddiness	2	0	100



Inference:

From the Varmam treatment results, thus it is proved that this treatment decreases the illness to a marginal level. Regular observation was done for 48 days. The outcome was assessed based on pain scale and gradation on a specific periodical basis.

PRIMARY OUTCOME:

EFFECT OF TRIAL DRUGS IN REDUCING PAIN IN CEGANAVATHAM:

Before treatment:

40 subjects had pain in neck, 28 had radiating pain in upper limbs, 38 had radiating pain in shoulders.

After treatment:

100% patients among 40 had reduction in neck pain, 89.29% among 28 had reduction in radiating pain in upper limbs, and 84.21% among 38 had reduction in radiating pain in shoulders.

Statistical Analysis:

All collected data were entered into computer using MS Excel Software using different columns as variables and rows as patients. SPSS software was used to perform stasistical analysis. Basic descriptive stasistics include frequency distributions and crosss tabulations were performed. The Quantity variables were expressed as mean ± Standard deviation and qualitative data as percentage. A probability value of < 0.05 was considered to indicate as stasistical significance. Paired 't' test was performed for determining the significance between before and after treatment.

MEAN AND STANDARD DEVIATION OF PAIN IN NECK

Pain in the Neck	Mean	Standard deviation	't' value & 'p' value
Before treatment	7.03	1.310	20.970,
After treatment	2.8	0.91	P < 0.0001

The average of pain score before treatment and after treatment were 7.03 and 2.8 respectively.

Pain in the Neck	't' value	df	Sig.(2 tailed)
Pain before treatment-after treatment	20.970	39	P < 0.0001

Mean ±Standard deviation of score for pain Before and after treatment

Pain in neck -BT	7.03 ± 1.310	t = 20.970,
Pain in neck -AT	2.8 ± 0.91	p < 0.0001 highly significant

There is statistically highly significant difference between the pain score before and after treatment ($p<0.0001$).

SECONDARY OUTCOME:

EFFECT OF TRIAL DRUGS IN REDUCING RESTRICTION OF MOVEMENTS IN CEGANAVATHAM:

Before treatment: 38 patients had restriction of movements.

After treatment: 71.05% among 38 had reduction in restriction of movements.

EFFECT OF VARMAM TREATMENT WITH TRIAL DRUGS IN CEGANAVATHAM:

Before treatment:

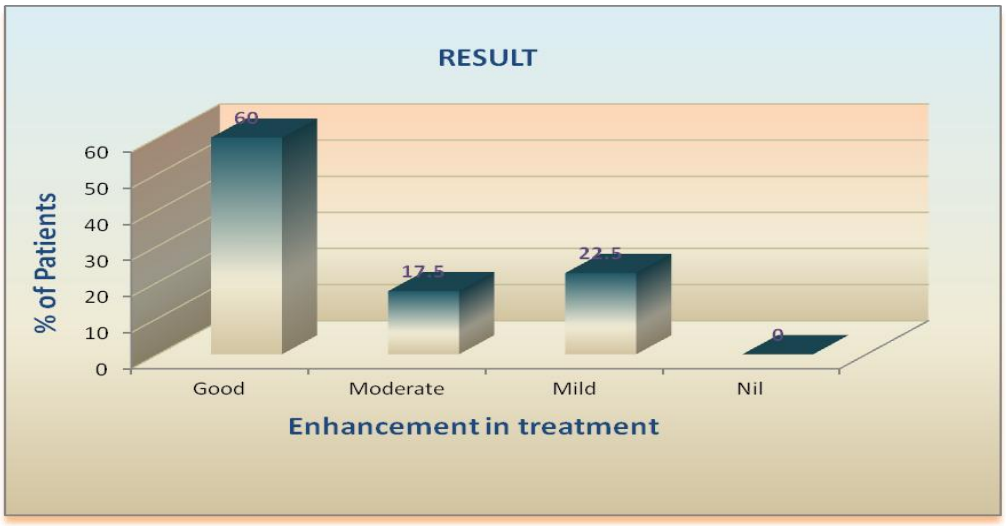
Among 10 patients included in the trial, all the 10 has reported with pain in nape, radiating pain in upper limbs, radiating pain in shoulders and 7 reported numbness, 2 with giddiness.

After treatment:

100% patients among 10 had reduction in neck pain, 100% among 10 had reduction in radiating pain in upper limbs, 90% among 10 had reduction in radiating pain in shoulders, 100% among 7 had reduction in numbness, 100% among 2 had reduction in giddiness.

RESULT:

RESULT	PATIENTS	
	NO	PERCENTAGE
Good	24	60
Moderate	7	17.5
Mild	9	22.5
Nil	0	0
Total	40	100



Inference:

Good result was seen in 60 % of treated patients

Moderate Enhancement was seen in 17.5% of treated patients.

Mild Enhancement was seen in 22.5% of treated patients.

OUT-PATIENTS' PROGRESS CHART

Sl.no	OP.no	Neck pain		Pain in ULs	
		BT	AT	BT	AT
1	C 19750	4	1	3	1
2	C 79908	8	4	7	3
3	C 79512	8	2	8	2
4	C 76422	5	3	5	2
5	C 66120	6	2	6	1
6	AG 4328	6	2	6	1
7	A 3509	6	4	6	4
8	C 77525	6	2	6	2
9	C 47245	7	3	7	2
10	C 85082	6	3	5	3
11	AR 6360	6	3	5	3
12	C 84197	5	2	5	1
13	C 71571	6	2	7	1
14	C 85995	7	2	7	1
15	C 76372	7	2	7	3
16	C 88856	8	3	8	4
17	B 88348	7	2	7	3
18	B 52576	8	2	8	3
19	C 84710	8	3	8	2
20	C 23917	6	3	6	4

NOTE: BT-Before Treatment; AT-After Treatment ; ULs-Upper limbs

IN-PATIENTS' PROGRESS CHART

Sl.no	IP. no	Neck pain		Pain in ULs	
		BT	AT	BT	AT
1	IP 3930	5	3	5	2
2	IP 3941	6	3	6	2
3	IP 4894	8	3	8	3
4	IP 4947	6	2	6	2
5	IP 4000	7	3	7	4
6	IP 4007	7	4	7	4
7	IP 4993	5	3	5	4
8	IP 5011	7	4	6	4
9	IP 5025	9	5	8	4
10	IP 5048	8	3	6	3
11	IP 5063	8	4	7	3
12	IP 5072	8	4	6	3
13	IP 4133	9	3	8	3
14	IP 5078	7	2	7	2
15	IP 4137	9	3	9	2
16	IP 4139	9	4	8	5
17	IP 5090	8	2	7	3
18	IP 5104	8	2	7	3
19	IP 4176	8	5	8	5
20	IP 5139	9	3	9	2

NOTE: BT-Before Treatment ; AT-After Treatment ; ULs-Upper limbs

Progress in patients treated with Varmam in addition to Trial drugs

Sl.no	IP .no	Neck pain		Pain in ULs	
		BT	AT	BT	AT
1	IP 3930	5	3	5	2
2	IP 4894	8	3	8	3
3	IP 4947	6	2	6	2
4	IP 4000	7	3	7	4
5	IP 4007	7	4	7	4
6	IP 5048	8	3	6	3
7	IP 5072	8	4	6	3
8	IP 4133	9	3	8	3
9	IP 5078	7	2	7	2
10	IP 4137	9	3	9	2

OUT-PATIENTS' BL00D INVESTIGATION CHART

Sl.no	op .no	Hb gm/dl		T.WBC Cells/Cu.mm		T.RBC million Cells/cu.mm		ESR(1/2 hr)		ESR(1hr)		BLOOD SUGAR(F) mg%		BLOOD SUGAR(PP) mg%	
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	C 19750	14.7	16	9100	9800	5	5	2	2	16	4	95	101	125	111
2	C 79908	16.6	16.8	11800	9800	5.2	5.3	2	2	4	4	83	92	118	101
3	C 79512	17.3	16.8	6500	6700	5.6	5.3	2	2	4	4	104	92	143	105
4	C 76422	11.1	11.9	5600	6400	4	4.4	8	2	22	4	97	107	101	121
5	C 66120	15.8	16.3	5200	5700	5.6	5.7	2	2	4	4	92	104	106	130
6	AG 4328	12.6	13.5	8300	7700	4.1	4.4	2	4	4	4	81	91	137	104
7	A 3509	14.5	15.4	7000	5400	4.5	4.7	2	2	4	4	79	98	117	109
8	C 77525	15.5	15.3	6500	7300	5.2	5.2	2	2	4	4	96	80	117	103
9	C 47245	12.3	12.2	7300	7600	4	4	4	6	8	14	96	98	104	113
10	C 85082	13.2	13.2	7800	7000	4.6	4.5	22	6	46	16	84	100	106	122
11	AR 6360	14.9	14.5	9400	8600	5.3	5.2	2	4	4	16	84	93	116	106
12	C 84197	12.8	13.1	5800	7400	4.5	4.6	2	6	4	14	83	92	88	
13	C 71571	16.3	17.1	7800	8500	5.1	5.4	2	42	8	90	84	77	128	98
14	C 85995	14.6	15	7300	7000	5	5.2	2	2	6	4	110	84	124	115
15	C 76372	13.5	12.2	7900	8400	4.4	4.6	22	2	44	6	94	94	111	107
16	C 88856	13.7	13.7	10300	9000	4.6	`4.6	2	4	4	18	99	99	112	110
17	B 88348	12.6	10.5	10900	9600	4.6	4.3	16	6	34	22	75	100	96	147
18	B 52576	12.4	12.3	8700	6600		4.2	4	8	8	22	104	94	115	102
19	C 84710	9.2	8.4	8300	10000	4.1	4.1	4	4	8	12	102	114	119	127
20	C 23917	13.5	11.9	8200	9300	4.5	4.4	12	14	22	30	101	99	111	111

OUT-PATIENTS' BL00D INVESTIGATION CHART

Sl.no	op .no	Urea gm/dl		Creatinine mg/dl		SGOT IU		SGPT IU		Alk.Phos mg/dl		Calcium mg/dl		Phosphorus mg/dl	
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	C 19750	14	16	0.4	0.5	20	20	22	16	227	169	10.3	11.6	2.7	3
2	C 79908	28	14	0.8	0.4	24	12	25	14	204	130	9.7	11.1	3	3.2
3	C 79512	16	16	0.5	0.5	18	14	20	16	127	159	11.7	10.4	3.5	3.1
4	C 76422	16	17	0.5	0.5	20	15	21	17	163	150	10.3	10	2.8	3
5	C 66120	16	19	0.5	0.5	17	35	20	48	179	220	10	10.6	3.2	3
6	AG 4328	17	16	0.6	0.5	18	16	20	20	190	194	10.1	10.2	3.1	3
7	A 3509	30	20	1	0.8	22	26	24	30	166	143	10.6	10.4	3.1	3.2
8	C 77525	15	14	0.5	0.4	38	26	72	28	180	172	10.9	10.2	3.2	3.1
9	C 47245	16	35	0.7	0.9	10	11	11	13	140	166	10.1	10	3.2	3
10	C 85082	16	16	0.7	0.5	28	15	25	16	263	171	10.1	10	3.6	2.9
11	AR 6360	17	17	0.5	0.6	18	15	19	18	199	177	9.8	10.5	3.1	2.8
12	C 84197	16	17	0.7	0.5	23	18	24	20	166	180	10.4	10.9	3.2	3
13	C 71571	17	15	0.5	0.4	27	14	28	16	176	135	9.9	10	3.1	2.9
14	C 85995	22	26	0.6	0.7	33	19	38	21	195	160	10.3	10.5	3.4	3.1
15	C 76372	19	14	0.6	0.4	14	11	15	13	196	173	10.2	10.4	3	2.9
16	C 88856	19	18	0.5	0.6	22	16	23	17	165	174	11.4	10.9	3.9	3.2
17	B 88348	19	16	0.5	0.6	16	18	20	20	247	182	11.7	10.7	3.2	3.2
18	B 52576	15	14	0.4	0.4	18	13	19	14	166	187	10.8	10.8	3.1	2.8
19	C 84710	17	14	0.5	0.5	20	16	21	18	152	186	10	10.4	2.9	3
20	C 23917	17	16	0.6	0.5	14	15	15	17	145	189	10.1	9.4	3.1	3

NOTE : ASO titer , CRP and RA factor were negative in all trial patients before and after treatment.

OUT-PATIENTS' URINE INVESTIGATION CHART

Sl.no	op .no	Albumin		Sugar		Deposits PUS CELLS		Deposits EPI CELLS	
		BT	AT	BT	AT	BT	AT	BT	AT
1	C 19750	NIL	NIL	NIL	NIL	2 TO 3	1 TO 2	2 TO 3	1 TO 2
2	C 79908	NIL	NIL	NIL	NIL	1 TO 2	2 TO 4	1 TO 2	1 TO 2
3	C 79512	NIL	NIL	NIL	NIL	1 TO 2	2 TO 4	1 TO 2	2 TO 4
4	C 76422	NIL	NIL	NIL	NIL	2 TO 3	1 TO 2	2 TO 3	1 TO 2
5	C 66120	NIL	NIL	NIL	NIL	2 TO 3	2 TO 4	2 TO 3	2 TO 4
6	AG 4328	NIL	NIL	NIL	NIL	1 TO 2	3 TO 4	1 TO 2	3 TO 4
7	A 3509	NIL	NIL	NIL	NIL	2 TO 3	2 TO 4	2 TO 3	2 TO 4
8	C 77525	NIL	NIL	NIL	NIL	2 TO 3	2 TO 3	2 TO 3	2 TO 3
9	C 47245	NIL	NIL	NIL	NIL	8 TO 10	1 TO 2	4 TO 8	2 TO 4
10	C 85082	NIL	NIL	NIL	NIL	2 TO 4	1 TO 2	2 TO 4	2 TO 4
11	AR 6360	NIL	NIL	NIL	NIL	1 TO 2	2 TO 3	1 TO 2	1 TO 2
12	C 84197	NIL	NIL	NIL	NIL	2 TO 4	4 TO 5	3 TO 6	4 TO 5
13	C 71571	NIL	NIL	NIL	NIL	2 TO 4	`PLENTY	2 TO 4	10 TO 12
14	C 85995	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	2 TO 4	1 TO 2
15	C 76372	NIL	NIL	NIL	NIL	2 TO 3	2 TO 4	2 TO 3	2 TO 4
16	C 88856	NIL	NIL	NIL	NIL	1 TO 2	3 TO 4	1 TO 2	3 TO 4
17	B 88348	NIL	NIL	NIL	NIL	1 TO 2	8 TO 10	1 TO 2	PLENTY
18	B 52576	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	2 TO 4	1 TO 2
19	C 84710	NIL	NIL	NIL	NIL	1 TO 2	8 TO 10	1 TO 2	PLENTY
20	C 23917	NIL	NIL	NIL	NIL	1 TO 2	4 TO 8	1 TO 2	4 TO 8

IN-PATIENTS' BL00D INVESTIGATION CHART

Sl.no	IP .no	Hb gm/dl		T.WBC Cells/Cu.mm		T.RBC million Cells/cu.mm		ESR(1/2 hr)		ESR(1hr)		BLOOD SUGAR(F) mg%		BLOOD SUGAR(PP) mg%	
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	IP 3930	12.8	14.3	6,400	7500	4.4	4.8	2	16	6	42	99	85	120	131
2	IP 3941	11.3	11.2	8,100	6600	4.2	4.1	2	6	22	18	80	86	100	105
3	IP 4894	14.8	14.9	6,000	6200	5	5	2	2	4	4	97	70	101	88
4	IP 4947	15.6	12.3	8,200	7100	5.1	5	6	4	12	8	94	106	105	140
5	IP 4000	13	13.3	6,900	6500	4.5	4.4	10	2	24	4	97	85	132	104
6	IP 4007	10.6	10	9,300	7700	4.1	3.7	4	6	10	18	92	86	106	97
7	IP 4993	9.1	9.2	6,800	6600	4.9	4.9	14	2	28	18	95	89	107	106
8	IP 5011	11.5	11.1	7,200	5200	3.8	3.6	2	4	8	14	103	75	136	85
9	IP 5025	17	15.5	8,600	8900	5.3	5.5	2	2	4	4	106	85	117	114
10	IP 5048	15.4	12.9	7,600	6400	5.1	5.1	2	2	6	4	102	101	120	121
11	IP 5063	15.6	15.5	6,800	6900	5.4	5.3	4	4	10	10	108	106	146	138
12	IP 5072	14.8	13.4	5100	6400	5.1	5.3	2	2	4	4	86	97	104	120
13	IP 4133	12.9	11.5	5900	6200	4.3	4.4	10	6	28	12	75	92	98	108
14	IP 5078	15	12.3	5200	5000	4.9	4.7	2	2	4	4	101	94	127	102
15	IP 4137	10.9	8.6	8400	8200	4.6	4.5	2	2	4	4	115	102	128	106
16	IP 4139	14.5	12.8	6300	7900	4.7	4.7	4	2	8	6	92	79	107	118
17	IP 5090	15.4	13.5	7900	7900	5.1	5.1	2	4	6	10	104	113	125	175
18	IP 5104	15.1	13	10600	7500	4.9	5	6	2	20	6	91	97	104	117
19	IP 4176	12.4	12.4	7400	7300	4.1	4.2	24	13	60	42	100	99	119	115
20	IP 5139	15.8	12	6400	6800	4.9	4.3	2	2	8	6	109	107	138	125

IN-PATIENTS' BL00D INVESTIGATION CHART

Sl.no	IP .no	Urea gm/dl		Creatinine mg/dl		SGOT IU		SGPT IU		Alk.Phos mg/dl		Calcium mg/dl		Phosphorus mg/dl	
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	IP 3930	21	22	0.6	0.6	22	20	26	23	166	146	11.2	11.2	3.2	3.1
2	IP 3941	15	15	0.5	0.4	24	13	26	14	182	140	10.6	10.4	3.2	3.1
3	IP 4894	24	16	0.7	0.5	18	16	20	18	227	172	12.3	10	4	3
4	IP 4947	20	17	0.7	0.5	19	16	20	18	193	199	10.6	10	3.4	2.8
5	IP 4000	23	24	0.6	0.6	35	19	30	22	189	166	10	10.9	2.9	3
6	IP 4007	22	19	0.7	0.5	64	19	58	22	186	189	10	11.2	3.2	3.4
7	IP 4993	19	18	0.6	0.5	11	21	16	22	199	171	10.3	10	3.6	2.8
8	IP 5011	30	40	0.8	1	11	15	10	17	146	199	10.6	10.6	3.1	3
9	IP 5025	30	28	0.8	0.8	26	24	27	25	170	216	11	10	3	2.8
10	IP 5048	16	14	0.5	0.4	17	38	19	41	162	163	10.6	10.9	3	3.2
11	IP 5063	20	18	0.6	0.6	20	19	22	21	190	180	10.6	10.6	3	3
12	IP 5072	21	14	0.6	0.4	12	18	14	21	145	192	10.5	10.9	3.2	3.3
13	IP 4133	15	15	0.4	0.5	15	18	17	20	150	172	10.6	10.5	3.1	3.1
14	IP 5078	25	24	0.7	0.7	14	12	15	13	147	145	10	10.1	3.2	2.9
15	IP 4137	14	14	0.4	0.4	30	12	31	14	159	153	11	10.5	3	3.2
16	IP 4139	14	15	0.4	0.5	18	13	19	15	160	152	10.5	10	3.5	2.7
17	IP 5090	15	15	0.4	0.5	18	29	20	31	169	167	11	10.8	3	3.3
18	IP 5104	21	17	0.6	0.6	22	22	23	25	186	169	11.2	10.5	3.1	3
19	IP 4176	19	18	0.5	0.5	25	24	26	25	159	155	10.7	10.7	3.6	3.5
20	IP 5139	14	18	0.4	0.6	20	17	22	19	147	161	9.9	10.5	2.6	3

NOTE : ASO titre, CRP and RA factor were negative in all trial subjects before and after treatment.

IN-PATIENTS' URINE INVESTIGATION CHART

Sl.no	IP .no	Albumin		Sugar		Deposits PUS CELLS		Deposits EPI CELLS	
		BT	AT	BT	AT	BT	AT	BT	AT
1	IP 3930	NIL	NIL	NIL	NIL	2 TO 3	3 TO 4	1 TO 2	1 TO 2
2	IP 3941	NIL	NIL	NIL	NIL	2 TO 3	1 TO 2	2 TO 3	2 TO 3
3	IP 4894	NIL	NIL	NIL	NIL	2 TO 4	1 TO 2	2 TO 4	2 TO 4
4	IP 4947	NIL	NIL	NIL	NIL	1 TO 2	2 TO 4	1 TO 2	2 TO 4
5	IP 4000	NIL	NIL	NIL	NIL	1 TO 2	2 TO 4	2 TO 3	2 TO 4
6	IP 4007	NIL	NIL	NIL	NIL	8 TO 10	2 TO 4	2 TO 3	1 TO 2
7	IP 4993	NIL	NIL	NIL	NIL	2 TO 4	1 TO 2	2 TO 4	2 TO 4
8	IP 5011	NIL	NIL	NIL	NIL	2 TO 3	2 TO 3	2 TO 3	1 TO 2
9	IP 5025	NIL	NIL	NIL	NIL	1 TO 2	1 TO 2	1 TO 2	2 TO 4
10	IP 5048	NIL	NIL	NIL	NIL	1 TO 2	2 TO 4	1 TO 2	3 TO 6
11	IP 5063	NIL	NIL	NIL	NIL	2 TO 4	2 TO 3	1 TO 2	1 TO 2
12	IP 5072	NIL	NIL	NIL	NIL	2 TO 3	2 TO 4	2 TO 3	2 TO 4
13	IP 4133	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	2 TO 4	2 TO 4
14	IP 5078	NIL	NIL	NIL	NIL	1 TO 2	2 TO 4	1 TO 2	2 TO 4
15	IP 4137	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	2 TO 4	2 TO 4
16	IP 4139	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	2 TO 4	2 TO 4
17	IP 5090	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	2 TO 4	2 TO 4
18	IP 5104	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	2 TO 4	2 TO 4
19	IP 4176	NIL	NIL	NIL	NIL	2 TO 4	2 TO 4	3 TO 5	3 TO 4
20	IP 5139	NIL	NIL	NIL	NIL	1 TO 2	2 TO 3	2 TO 4	2 TO 3

DISCUSSION

Ceganavatham has increased nowadays due to the modern life style modifications and occupational reasons in the society. Severity of the disease has become a challenge for the practitioners to discover newer therapies. Various treatments and medicines have been tried previously for treating this condition. With this due respect, the indications of trial drugs mentioned in Siddha sastric texts were chosen for the study.

The internal medicine Maha Analuruva Chooranam was analyzed methodically and Biochemical analysis was done. Acute toxicity study was carried out to confirm the safety of the drug. Repeated oral toxicity study conducted with this drug in rats did not exhibit significant changes in blood counts and in haemoglobin content. The biochemical markers of Liver and Kidney function tests did not show evidence of Liver and Kidney toxicity. There was no significant change in biochemical parameters like blood cholesterol, blood sugar. No significant changes in body weight, food, water intake were observed in drug treated animals when compared to controls.

40 patients were admitted for the trial, out of which, 20 were out-patients and 20 were in-patients. 10 of the 20 in-patients were given varmam therapy along with the internal and external medicines. Progress of the patients was documented and assessed regularly.

Various criteria like distribution of gender, age, kaalam (seasonal variation) and diet were assessed. Clinical manifestations and assessment of the enhancement in the prognosis of the disease with trial drugs and with varmam were taken into account for evaluating the efficacy of trial drugs.

The study reveals highest range of occurrence of disease between the age of 41-50 among study sample. The reason is obviously the degenerative changes in this age group. According to Siddha concept, during 40-50 years of age which the principle element Prithvi (earth) combines with appu(water) resulting in weakness, general debility and degenerative changes.

Males are affected more than females among the study sample (52.5%). This may be due to increased mechanical stress and lack of essential vitamins and minerals. 95% of subjects among the 40 were non-vegetarians.

On considering their role in society, 80% patients of study sample were from below middle class group, 17.5% were from middle class group and the remaining 2.5% were from above middle class group.

Among the 40 subjects, home makers were in higher percentage (32.5%), persons in labour job stood next (17.5%), followed by clerks and tailors (10%), operator, supervisors and drivers (7.5%), farmer, mechanic and musician (2.5%). Heavy house-hold works act as an aggravating factor in home makers. Occupation with postures involving prolonged neck flexion is a causative factor in case of labourers, clerical persons, supervisors and tailors. Excessive strain to the vertebral column due to prolonged travel for long distances is a causative factor of this condition in drivers. Lifting heavy weights causes much strain to cervical spine in heavy weight lifting mechanics and farmers. Adapting a particular posture for long time aggravates the causative factor in musicians.

Highest occurrence (72.5%) was reported in Mudhuvenil kaalam and 27.5% was reported during Kaar kaalam. According to Siddha literature, the Vatha kuttram attains thannilai valarchi (mild derangement) during mudhuvenil kaalam and vetrunilai valarchi (much derangement) during Kaar kaalam. Vatham elevates in the body between the months of aadi to iyppasi ie from the midst of muthuvenil kaalam.

Viyaanan and Samaanan vayus were affected in all the 40 subjects and Abaana vayu was affected in 7 patients. In Pitham, Saathaka pitham was affected in 40 patients, Ranjagam in 3 patients and Analakam in 1 patients. In Kabam, Santhigam was affected in all the 40 patients and this may be the reason for the joint involvement. Naadi nadai (Pulse reading) was examined in all the patients. 40% patients had pithavatha nadi, 17.5% patients had vathapitha nadi, 15% patients had kabapitha nadi, 22.5% subjects had kabavatha nadi and 5% patients had pithakaba nadi.

Malam was affected (constipation) in 6 patients. Kai was affected in all the 40 subjects (100%)**.**

Among 40 subjects of the trial 100% subjects reported with pain in nape, 70% with radiating pain in upper limbs, 95% reported radiating pain in shoulders, 62.5% reported numbness in upper limbs, 27.5% with giddiness, 2.5% with burning sensation in upper limbs , 95% reported restriction of movements, 7.5% with swelling.

Laboratory investigation of blood and urine were done for all 40 subjects prior to and after the trial. There were no significant changes in the parameters. Pre-treatment and post-treatment results of Liver function tests and renal function tests were normal.

The radiographic studies of the subjects showed narrowed joint space and presence of osteophytes. The trial drug showed reduction in clinical signs and symptoms rather than any changes in radiographic studies.

The treatment was focused to stabilize the affected kuttram and to get relieved from symptoms. Before treatment the patients were advised to take Agasthiyar Kuzhambu-200 mgs with palm jaggery early morning for purgation followed by rest on that day. The next day onwards treatment with the trial drugs "Maha Analuruva Chooranam" (Internal medicine) and "Pungan ennai" (External medicine) was started.10 among 20 in-patients were given varmam therapy regularly. During treatment, the subjects were advised to follow pathiyam (diet restrictions), to avoid lifting heavy weights and to avoid adopting certain postures involving prolonged neck flexion.

After treatment, 100% patients were relieved from pain in nape, 89.29% from radiating pain in right upper limb, 95.65% from radiating pain in left upper limb 84.21% from radiating pain in shoulders, 80% from numbness in upper limbs, 72.73% from giddiness, 100% from burning sensation in upper limbs, 71.05% from restriction of movements, 66.67% from swelling.

Primary outcome:

Effect of trial drugs in reducing pain in Ceganavatham was statistically highly significant.

100% patients among 40 had reduction in neck pain, 89.29% among 28 had reduction in radiating pain in right upper limb, 95.65% among 23 had reduction in radiating pain in left upper limb and 84.21% among 38 had reduction in radiating pain in shoulders post-treatment.

Secondary outcome:

Effect of trial drugs in reducing restriction of movements in Ceganavatham was good.

71.05% among 38 had reduction in restriction of movements after treatment.

Effect of Varmam with Trial drugs in Ceganavatham:

100% patients among 10 had reduction in neck pain, 100% among 10 had reduction in radiating pain in upper limbs, 90% among 10 had reduction in radiating pain in shoulders, 100% among 7 had reduction in numbness, 100% among 2 had reduction in giddiness post-treatment .

Varmam therapy produced immediate relief from pain for about three to five hours in the patients. Numbness was reduced considerably for all the 7 patients with numbness, restriction of movement reduced in 8 out of 9 patients. Overall improvement was good.

SUMMARY

The study was started after analyzing the internal medicine methodically. Biochemical analysis was done. Acute toxicity study was carried out to confirm the safety of the drug.

40 patients were admitted for trial among whom 20 were out-patients and 20 were in-patients. 10 of the in-patients were given Varmam therapy in addition to internal and external medicines. Clinical manifestations, assessment of the improvement in the patients treated with trial drugs and with Varmam in addition were taken into account for evaluating the efficacy of trial drugs and the effect of Varmam. Progress of the patients was regularly documented.

Based on regular observation for 48 days, the outcome was assessed. Effect of trial drugs in reducing pain in Ceganavatham was statistically highly significant. Effect of trial drugs in reducing restriction of movements in Ceganavatham was good. Effect of Varmam with trial drugs in Ceganavatham was good.

Enhancement in Patient Symptoms was Good in 24 Patients, Moderate in 7 patients and Mild in 9 patients.

Varmam therapy produced moderate relief from pain, numbness and restriction of movements. Patients treated with trial drugs and Varmam showed Good enhancement when compared to those who were treated only with trial drugs. Duration of relief from pain and numbness was about 3-5 hours in these subjects immediately after manipulating Varmam.

CONCLUSION

Siddha literature is cherished with plenty of formulations for various disease conditions. This study was done with the sastric medicines “Maha Analuruva Chooranam” (Internal medicine) and “Pungan Ennai” (External medicine). These are indicated for vatha diseases in Siddha texts.

Among study sample, 60% had Good Improvement, 17.5% had moderate improvement and 22.5% had mild improvement. The results of the study reveal the fact that these medicines are efficacious in reducing pain, numbness and restriction of movements in Ceganavatham.

Varmam therapy along with trial drugs was effective as the overall improvement was good and to certain extent earlier in the subjects who were given Varmam therapy. Many of these subjects had reduction or relief from pain, numbness for about three to five hours after manipulating Varmam points.

The acute toxicity study have shown no renal and hepato toxicity. Hence the trials drugs are considered as very safe.

Thus it is concluded that “Maha Analuruva Chooranam” (Internal medicine) and “Pungan Ennai” (External medicine) are effective in reducing pain, numbness, swelling and restriction of movements in Ceganavatham. Varmam therapy along with trial drugs was effective in giving quick and immediate relief from symptoms.

However further work with large number of patients should be carried out towards finding the ideal response.

BIBLIOGRAPHY

1.K.Lakshmi Sindhoor1*, Siva Kumar.Gurram2,S.Nagarjuna1, Y. Padmanabha Reddy1Comparative Study of Anti-Inflammatory activity of Petroleum Ether and Ethanolic extracts of Brassica JunceaInternational Journal of PharmTech Research

CODEN (USA): IJPRIF ISSN : 0974-4304

Vol.4, No.3, pp 1172-1176, July-Sept 2012

2. Sekar Mahendran, Shrishailappa Badami, Subban Ravi, Boreddy Shivanandappa Thippeswamy, Veeresh Prabhakar Synthesis and evaluation of analgesic and anti-inflammatory activities of most active free radical scavenging derivatives of embelin-A structure-activity relationship. Chemical & pharmaceutical bulletin (impact factor: 1.7). 01/2011; 59(8):913-9.

3. M.S Al-Ghamdi, The anti-inflammatory, analgesic and antipyretic activity of Nigella sativa Journal of Ethnopharmacology Volume 76, Issue 1, June 2001, Pages 45–48

4. Pei luo, yuen fan wong, lin ge, zhi feng zhang, yuan liu, liang liu, hua zhouanti-inflammatory and analgesic effect of plumbagin through inhibition of nuclear factor-kappa b activation

5. Kumar, Sarvesh ; Singhal, Vandana ; Roshan, Reema ; Sharma, Amit ; Rembhotkar, Gopal Waman ; Ghosh, Balaram (2007) Piperine inhibits TNF-α induced adhesion of neutrophils endothelial monolayer through suppression of NF-κB and IkappaB kinase activation European Journal of Pharmacology, 575 (1-3). pp. 177-186. ISSN 0014-2999

6.M Mohan1,*, VS Gulecha1, VM Aurangabadkar1, R Balaraman2, A Austin3 and S Thirugnanasampathan3 Analgesic and anti-inflammatory activity of a polyherbal formulation (PHFAROGH)Department of Pharmacology, M. G. V's College of Pharmacy, Panchavati, Nasik, Maharashtra 422003, India

7. Haw-Yaw Young, Yen-Lin Luo, Hao-Yuan Cheng, Wen-Chiuan Hsieh, Jung-Chun Liao, Wen-Huang Peng Analgesic and anti-inflammatory activities of [6]-gingerol

Journal of Ethnopharmacology Volume 96, Issues 1–2, 4 January 2005, Pages 207–210

8. M.Shanmugavelu,Noi Naadal Noi Mudhal Naadal Thirattu, 3rd Edition 2003:p233

9. Dr.K.S.Uthamarayan-Siddha Maruthuvanga Surukkam, 3rd edition 2003 -142-148

10..Dr.K.S.Uthamarayan-Siddha Maruthuvanga Surukkam, 3rd edition 2003 -170-171

11. Dr.K.S.Uthamarayan-Siddha Maruthuvanga Surukkam, 3rd edition 2003 -170-171

12. Dr.K.S.Uthamarayan-Siddha Maruthuvanga Surukkam, 3rd edition 2003 -182

13. J.R.Krishnamoorthy, R. Kumaravel, R, S, Rama Swamy, A.Maria Joseph, G. Thiyagarajan, S.Rajalakshmi, C.N.Deyvanayagam, Siddha Medicine, Vol 3, Tamil Valarchi Kazhagam, 2010: p89.

14.. T.Kannan Rajaram,Varma Pulligalin Iruppidam,2007:p 188.

15.. T.Kannan Rajaram,Varma Pulligalin Iruppidam,2007:p 376

16. Text book of Orthopedics & Trauma, Editor: GS. Kulkarni (Vol-iii)-2621 – 2622

17. Text book of anthopedics & Trauma, Editor: GS. Kulkarni (Vol-iii)-2623 – 2625

18. Human Anatomy – 5th edition – Gosling Harris Hampherson whitmore willan – Pages 396 – 398.

19. Apley's System of Orthopaedics & fractures – 9th edition – Pages 445 – 446

20. Textbook of Orthopedics & Trauma. Editor – G S Kulkarni - Volume 3 Pages - 2621-2625

21. Text book of Orthopedics & Trauma, Editor: GS. Kulkarni (Vol-iii) - Pages 2631 – 2634

22. Text book of Orthopedics & Trauma, Editor: GS. Kulkarni (Vol-iii) - Pages 2628 – 2630

23. The Wealth of India, Council of Scientific and Research, P – 164

24. Databases on Medicinal Plants used in Ayurvedha, Vol – I, P – 102

25. The Wealth of India, P – 208

26. Database, Vol – II, P – 295

27. The Wealth of India Vol - iii P – 167

28. Indian Herbal Pharmacopoeia revised – 2002, P – 310,311

29. Indian Herbal Pharmacopoeia, P – 314

30. Database Vol – III P – 475, Central council for research in Ayurvedha and Siddha

31. Dr.K.M.Nadkarni's Indian Materia Medica P- 1207

32**.** Indian Herbal Pharmacopoeia, Revised edition, P – 369

33. Dr.M.Nadkarnis Indian Materia Medica, Vol – I, P – 236

34. Indian Medicinal plants Compendium, Vol – V,P - 104

35. Indian Medicinal Plants Vol – III, Orient Longman, P – 13

36. Indian Medicinal Plants – A Compendium of 500 Species – Orient Longman, Vol – I, P – 153

37. Clinical Manual for Nursing Practise. (National Institute of Health Warren Grant Magnuson Clinical Center

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Title: PRECLINICAL AND CLINICAL STUDY ON "MAHA ANALURUVA CHOORANAM" (INTERNAL) AND "PUNGAN ENNAI" (EXTERNAL) FOR THE TREATMENT OF "CEGIANA VATHAM" (CERVICAL SPONDYLOSIS).
No.
NIS/IEC/2011/3/24 - 24/12/2011

DECSION

Opinion of the Institutional Ethics Committee – Please Check one
✓ Approval _____ Modifications required prior to approval (Please specify one space below) _____ Disapproval K. Manickavasakam (Dr. K. MANICKAVASAKAM) Member secretary Date of review: _____ Signed: _____ (Please print name) Dr.V.SUBRAMANIAN chair person (Please delee as appropriate, Chairperson, Secretary)
Modifications needed Modification given to candidate
The research proponent is hereby informed that the Institutional Ethics Committee will require the following: 1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days 2. The progress report to be submitted to the IEC atleast annually 3. Upon completion of the study, a final study status report needs to submitted to the IEC

IAEC PROTOCOL NO : 1248/ac/09/CPCSEA/4-24/2011.

20/12/2011

CERTIFICATE

This is certify that the project title..PRECLINICAL AND CLINICAL STUDY ON "MAHA ANALURUVA CHOORANAM" (INTERNAL MEDICINE) AND "PUNGAN ENNAI" (EXTERNAL MEDICINE) FOR THE TREATMENT OF "CEGANA VATHAM" (CERVICAL SPONDYLOSIS).

has been approved by the IAEC.

Prof. Dr. K. Manickavasakam
Name of Chairman/Member Secretary IAEC:

Dr. B. Jayachandran Dare
Name of CPCSEA nominee:

Signature with date

Chairman/Member Secretary of IAEC:

CPCSEA nominee:

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by Office)

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

CERTIFICATE OF BOTANICAL AUTHENTICITY

Certified that the following plant drugs used in the Siddha formulation **Maha analuruva Chooranam** (Internal) and **Pungan ennai** (External) for the treatment of **Cegana vatham** (Cervical spondylosis) taken up for Post Graduation Dissertation studies by **Dr.V.Vikram Kumar**, M.D.(S), II year, Department of Sirappu Maruthuvam, 2011-12, are identified and authenticated through Visual inspection / Experience, Education & Training/ Organoleptic characters/ Morphology / Micromorphology / Taxonomical/ Microscopical methods.

Plumbago zeylanica Linn. (Plumbaginaceae), Root
Pongamia glabra Vent. (Fabaceae), Root
Holoptelea integrifolia Planch. (Ulmaceae), Stem and root bark
Embelia ribes Burm. f. (Myrsinaceae), Fruit
Piper longum Linn. (Piperaceae), Fruit
Terminalia chebula Retz. (Combretaceae), Fruit
Brassica juncea (Linn.) Czern. & Coss. (Brassicaceae), Seed
Zingiber officinale Rosc. (Zingiberaceae), Rhizome
Nigella sativa Linn. (Ranunculaceae), Seed
Pongamia glabra Vent. (Fabaceae), Seed oil
Azadirachta indica A. Juss. (Meliaceae), Seed oil
Ricinus communis Linn. (Euphorbiaceae), Seed oil
Calophyllum inophyllum Linn. (Clusiaceae), Seed oil
Sesamum indicum Linn. (Pedaliaceae), Seed oil
Allium cepa Linn. (Liliaceae), Bulb
Acorus calamus Linn. (Araceae), Rhizome
Ferula foetida Regel. (Apiaceae), Gum-oleoresin
Piper nigrum Linn. (Piperaceae), Fruit
Trachyspermum ammi (Linn.) Sprague (Apiaceae), Fruit
Syzygium aromaticum(Linn.) Merr. & L.M. Perry (Myrtaceae), dried flower bud
Anethum graveolens Linn. (Apiaceae), Fruit
Picrorhiza kurroa Royle ex Benth. (Scrophulariaceae), Root

Certificate No: NIS/MB/45/2012

Date: 12-6-12

12/6/12

Authorized Signatory

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This Certificate is awarded to Dr V.VIKRAMKUMAR

for participating as a ~~Resource Person~~ / Delegate in the VI Workshop on

"Research Methodology & Biostatistics"

for AYUSH Post-Graduates & Researchers

organized by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University

from 12th September 2011 to 16th September 2011

Dr. MAYILVAHANAN NATARAJAN
M.S.Orth. M.Ch.Orth. (L'pool) Ph.D. D.Sc. F.R.C.S. D.Sc. (Hon)^3
VICE CHANCELLOR

Dr. SUDHA SESHAYYAN, M.S.
REGISTRAR (FAC)

Dr. N. KABILAN, M.D. (Siddha)
READER, DEPT. OF SIDDHA

NATIONAL INSTITUTE OF SIDDHA

ACUTE TOXICITY STUDY OF MAHA ANALURUVA CHOORANAM

[WHO Guidelines, 1993]

Principle:

Acute toxicity was carried out in Swiss albino mice with a single exposure of 10 times of the recommended therapeutic dose of test compound the study duration will be 14 days.

Animal species	**:**	Swiss albino mice
Age / Weight / Size	**:**	6 weeks. Mice-20-25 gms.
Gender	**:**	Both male and female
Number of Animals	**:**	Mice: 10
Acclimatization Period	**:**	7 Days
Clinical dose	**:**	3.0 gms\day

S.No	Group	No of mice
1	Vehicle control (saline)	10 (5 male, 5 female)
2	Toxic dose 10 X therapeutic dose (0.054gms)	10 (5 male, 5 female)

Test Animals

Test animals were obtained from the animal laboratory of the King institute, Chennai and stocked at National institute of siddha, Chennai. All the animals were kept under standard environmental condition (27+ or – 2 degree c).The animals had free access to water and standard pellet diet (Sai Durga foods pvt.ltd, Bangalore).The principles of laboratory animal care were followed and the Institutional ethical committee approved the use of animals and the study design. **(1248/ac/09/CPCSEA/4-24/ 2011)**

Route of administration:

Oral route was selected, because it is the normal route of clinical administration.

Test substance and vehicle

Maha Analuruva Chooranam is Brown in colour. The test substance is insoluble in water, in order to obtain and ensure the uniformity in drug distribution the drug is dissolved by aqueous Tween 80 solution (10%).

Administration of doses

Maha Analuruva Chooranam was suspended in aqueous Tween 80 solution (10%), with uniform mixing and it was administered to the groups in a single oral dose. The control groups received equal volume of the vehicle. The animals were weighed before giving the drug. The dose level was calculated according to body weight and surface area. Since the clinical dose was 3.0gms\day it was converted to animal dose (0.054gms) and then administered. The principle of laboratory animal care was followed.

Observations

Observations were made and recorded systematically and continuously observed as per the guideline after substance administration. The animals were monitored for behavioural parameters like

1. Awareness
    - Alertness
    - Visual placing
    - Stereotype
    - Passivity
2. Mood
    - Grooming
    - Restlessness
    - Irritability
    - Fearfulness
3. Motor activity
    - Spontaneous activity
    - Reactivity
    - Touch response
    - Pain response.

Animals were observed for body weight and mortality for 14 days. If animals died during the period of study, the animals were sacrificed. At the end of the 14^{th} day all animals were sacrificed and necropsy was done.

Body Weight

Individual weight of animals was determined before the test substance was administered and daily for 14 days. Weight changes were calculated and recorded. At the end of the test, surving animals were weighed and sacrificed.

Results:

Maha Analuruva Chooranam at the dose 0.054gms/animal did not exhibit any mortality in mice.

No behavior changes were noted for the first 4 hours and for the next 24 hours and throughout the study period of 14 days. No weight reduction was noted before and after the acute study duration. Reflexes were found to be normal before and after the study. All other observations were found to be normal before and after the study. In Necropsy, the organs of the animal such as, Liver, Heart, Lungs, Pancreas, Spleen, Stomach, Intestine, Kidney, Urinary bladder, Uterus all appeared normal.

BIO - CHEMICAL ANALYSIS OF MAHA ANALURUVA CHOORANAM ANALYSED AT NATIONAL INSTITUTE OF SIDDHA

S.No	EXPERIMENT	OBSERVATION	INFERENCE
1.	Physical Appearance of sample	Brown in colour	
2.	**Solubility:** a. A little (500mg) of the sample is shaken well with distilled water. b. A little (500mg) of the sample is shaken well with con. HCl/ Con. H_2So_4	Sparingly soluble	Presence of Silicate
3.	**Action of Heat:** A small amount (500mg) of the sample is taken in a dry test tube and heated gently at first and then strong.	White fumes evolved	Presence of Carbonate
4.	**Flame Test:** A small amount (500mg) of the sample is made into a paste with con. HCl in a watch glass and introduced into non-luminous part of the Bunsen flame.	No Bluish green flame appeared.	Absence of Copper
5.	**Ash Test:s** A filter paper is soaked into a mixture of sample and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited	No Yellow coloured flame	Absence of sodium

Preparation of Extract: 5gm of Maha Analuruva Chooranam is weighed accurately and placed in a 250ml clean beaker and added with 50ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

S.No	EXPERIMENT	OBSERVATION	INFERENCE
	I. Test For Acid Radicals		
1.	**Test For Sulphate:** a.2ml of the above prepared extract is taken in a test tube to this added 2ml of 4% dil. ammonium oxalate solution	No Cloudy appearance present	Absence of Sulphate
2.	**Test For Chloride:** 2ml of the above prepared extracts is added with 2ml of dil-HCl is added until the effervescence ceases off.	No cloudy appearance present	Absence of Chloride
3.	**Test For Phosphate:** 2ml of the extract is treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNo3	No cloudy yellow appearance present	Absence of Phosphate
4.	**Test For Carbonate:** 2ml of the extract is treated with 2ml dil. magnesium sulphate solution	No Cloudy appearance present	Absence of Carbonate
C	**Test For Nitrate:** 1gm of the substance is heated with copper turning and concentrated H2So4 and viewed the test tube vertically down.	No Brown gas evolved	Absence of Nitrate
6.	**Test For Sulphide:** 1gm of the substance is treated with 2ml of con. HCL	No Rotten Egg Smelling gas evolved	Absence of Sulphide
7.	**Test For Fluoride & Oxalate:** 2ml of extract is added with 2ml of dil. Acetic acid and 2ml dil.calcium chloride solution and heated**.**	No Cloudy appearance	Absence of fluoride and oxalate

8.	**Test For Nitrite:** 3drops of the extract is placed on a filter paper, on that-2 drops of dil.acetic acid and 2 drops of dil. Benzidine solution is placed.	No Characteristic changes	Absence of Nitrite
9.	**Test For Borate:** 2 Pinches (50mg) of the substance is made into paste by using dil.sulphuric acid and alcohol (95%) and introduced into the blue flame.	Bluish green colour flame did not appear.	Absence of borate
II. Test For Basic Radicals			
1.	**Test For Lead:** 2ml of the extract is added with 2ml of dil.potassium iodine solution.	No Yellow Precipitate is obtained.	Absence of Lead
2.	**Test For Copper:**	No Blue colour	Absence
3.	**Test For Aluminium:** To the 2ml of extract dil.sodium hydroxide is added in 5 drops to excess.	No characteristic changes	Absence of aluminium
4.	**Test For Iron:** a.To the 2ml of extract add 2ml of dil.ammonium solution b.To the 2ml of extract 2ml thiocyanate solution and 2ml of con HNo3 is added	Red colour appeared	Presence of Iron
5.	**Test For Zinc:** To 2ml of the extract dil.sodium hydroxide solution is added in 5 drops to excess and dil.ammonium chloride is added.	White precipitate is not formed	Absence of Zinc

6.	**Test For Calcium:** 2ml of the extract is added with 2ml of 4% dil.ammonium oxalate solution	No Cloudy appearance and white precipitate was obtained.	Absence of calcium
7.	**Test For Magnesium:** To 2ml of extract dil.sodium hydroxide solution is added in drops to excess.	White precipitate was obtained	Presence of Magnesium
8.	**Test For Ammonium:** To 2ml of extract 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution are added.	No Brown colour appeared	Absence of ammonium
9.	**Test For Potassium:** A pinch (25mg) of substance is treated of with 2ml of dil.sodium nitrite solution and then treated with 2ml of dil.cobalt nitrate in 30% dil.glacial acetic acid.	No Yellowish precipitate was obtained.	Absence of Potassium
10.	**Test For Sodium**: 2 pinches (50mg) of the substance is made into paste by using HCl and introduced into the blue flame of Bunsen burner.	Yellow coloured flame appeared	Presence of Sodium
11.	**Test For Mercury**: 2ml of the extract is treated with 2ml of dil.sodium hydroxide solution.	No yellow precipitate was obtained.	Absence of Mercury
12.	**Test For Arsenic:** 2ml of the extract is treated with 2ml of dil.sodium hydroxide solution.	No brownish red precipitate was obtained.	Absence of Arsenic

III. Miscellaneous			
1.	**Test For Starch:** 2ml of extract is treated with weak dil.Iodine solution	No Blue colour developed	Absence of starch
2.	**Test For Reducing Sugar:** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	Brick red colour is developed	Presence of reducing sugar
3.	**Test For The Alkaloids**: a) 2ml of the extract is treated with 2ml of dil.potassium lodide solution. b) 2ml of the extract is treated with 2ml of dil.picric acid. c) 2ml of the extract is treated with 2ml of dil.phosphotungstic acid.	Red colour developed Yellow colour developed White precipitate developed	- Presence of Alkaloid
4.	**Test For Tannic Acid:** 2ml of extract is treated with 2ml of dil.ferric chloride solution	No black precipitate was obtained	Absence of Tannic acid
5.	**Test For Unsaturated Compound:** To the 2ml of extract 2ml of dil.Potassium permanganate solution is added.	Potassium permanganate is not decolourised	Absence of unsaturated compound
6.	**Test For Amino Acid:** 2 drops of the extract is placed on a filter paper and dried well. 20ml of Biurette reagent is added**.**	No Violet colour developed	Absence of amino acids

7.	**Test For Type Of Compound:** 2ml of the extract is treated with 2 ml of dil.ferric chloride solution.	No green colour developed No red colour developed No violet colour developed No blue colour developed	Absence of oxy quinole pinephrine and pyro catechol. Anti pyrine, Aliphatic amino acids and meconic acid are absent Apomorphine salicylate and Resorcinol are absent Morphine, Phenol cresol and hydrouinoneare absent

Preliminary Qualitative Phyto chemical tests procedure and interpretation of results

S.NO	CONSITUENTS	INFERENCE
1.	**Silicate**	Present
2.	**Carbonate**	Present
3.	**Iron**	Present
4.	**Alkaloids**	Present
5.	**Reducing sugar**	Present
6.	**Chloride**	Absent
7.	**Copper**	Absent
8.	**Sodium**	Absent
9.	**Sulphate**	Absent
10.	**Phospate**	Absent
11.	**Nitrate**	Absent
12.	**Oxalate**	Absent
13.	**Fluoride**	Absent
14.	**Borate**	Absent
15.	**Lead**	Absent
16.	**Aluminium**	Absent
17.	**Zinc**	Absent
18.	**Calcium**	Absent
19.	**Magnesium**	Absent
20.	**Ammonium**	Absent
21.	**Potassium**	Absent
22.	**Mercury**	Absent
23.	**Arsenic**	Absent
24.	**Starch**	Absent
25.	**Sulphide**	Absent
26.	**Tannic Acid**	Absent
27.	**Unsaturated compound**	Absent
28.	**Amino Acid**	Absent
29.	**Type of compounds**	Absent

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FORM l - SCREENING AND SELECTION PROFORMA

1.OP NO: .....

2. NAME: …….

3. AGE: …… 4.GENDER: …….....

5. OCCUPATION: …….. 6.INCOME: ……

7. ADDRESS: ……

……

……

8. CONTACT NO: ……

INCLUSION CRITERIA:

- Age : 15-60 Yrs Yes / No
- Sex : Both male and female Yes / No
- Patients having symptoms of neck pain radiating to shoulders and upper limbs with or without numbness, giddiness and neck stiffness Yes / No
- Patients who are willing to undergo radiological investigation and Laboratory investigations. Yes / No
- Patients who are willing to sign the informed consent stating that he/she will conscientiously stick to the treatment during 48days but can opt out of the trial of his/her own conscious discretion. Yes / No

EXCLUSION CRITERIA:

- Trauma
- Congenital anomalies of spine
- Cervical rib
- Spina bifida
- Ankylosing spondylosis
- Tuberculosis of spine
- Diabetes mellitus
- Hypertension
- Cardiac diseases
- Pregnancy and lactation
- Neoplasms
- Patients with any other serious systemic illness

ADMITTED TO TRIAL:

	YES	**NO**
	☐	☐

If yes,	**OPD**	**IPD**
	☐	☐

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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FORM lI -HISTORY TAKING PROFORMA

1. SERIAL NO OF THE CASE: ……. 2.OP/IP NO: .....

3. NAME: …… 4. AGE: …….. 5. GENDER: ……..

5. OCCUPATION: …… 6. INCOME: ……..

7.COMPLAINTS & DURATION:

8. PERSONAL HISTORY:

PERSONAL HABITS	YES	NO	IF YES, SPECIFY DURATION/QUANTITY
Smoking			
Tobacco Chewing			
Alcoholism			
Narcotic drugs			

9. HISTORY OF PREVIOUS ILLNESS:

10. FAMILY HISTORY:

Whether this problem runs in family?

1. Yes ☐ 2.No ☐

If yes, mention the relationship of affected person(s)

1._____

2._____

3._____

11.DIETARY HABIT:

1.Vegetarian ☐

2.Non-vegetarian ☐

12. MENSTRUAL AND OBSTETRIC HISTORY:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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FORM III - CLINICAL ASSESSMENT PROFORMA

1. SERIAL NO: ……

2.OP / IP NO: .....

3. NAME: …… 4.AGE: …… 5.GENDER: .....

GENERAL EXAMINATION:

Height (cms) : …….

Weight (kg) : …….

Temperature(°F) : …….

Pulse rate(/min) : …….

Heart rate(/min) : …….

Respiratory rate(/min) : …….

Blood pressure(mm/Hg) : …….

	Present	Absent
Pallor	☐	☐
Jaundice	☐	☐
Cyanosis	☐	☐
Lymphadenopathy	☐	☐
Pedal edema	☐	☐
Clubbing	☐	☐
Jugular vein pulsation	☐	☐

SYSTEMIC EXAMINATION

CardioVascular System **: …….**
Respiratory system **: …….**
Gastro-intestinal system **: …….**
CentralNervous System **: …….**
Urogenital system **: …….**
Endocrine System **: …….**

EXAMINATION OF LOCOMOTOR SYSTEM

EXAMINATION OF CERVICAL REGION:

COMPLAINTS	0^{th} day	8^{th} day	15^{th} day	22^{nd} day
Pain in neck				
Pain in shoulder				
Nature of pain				
Onset of pain				
Radiating pain in right upper limb				
Radiating pain in left upper limb				
Numbness				
Tenderness				

Restriction of movements				
Burning sensation				

OTHER SYMPTOMS

Giddiness				
Other joints				

COMPLAINTS	**29th day**	**36th day**	**43rd day**	**49th day**
Pain in neck				
Pain in shoulder				
Nature of pain				
Onset of pain				
Radiating pain in right upper limb				
Radiating pain in left upper limb				
Numbness				
Tenderness				
Restriction of movements				
Burning sensation				

OTHER SYMPTOMS

Giddiness				
Other joints				

CLINICAL EXAMINATION

I.INSPECTION:

	0^{th} day	8^{th} day	15^{th} day	22^{nd} day	29^{th} day	36^{th} day	43^{rd} day	49^{th} day
Attitude:								
Muscle wasting								
Swelling								

II PALPATION:

	0^{th} day	8^{th} day	15^{th} day	22^{nd} day	29^{th} day	36^{th} day	43^{rd} day	49^{th} day
Tenderness								
Local heat								
Joint stiffness								

III. RESTRICTION OF MOVEMENTS:

	0^{th} day	8^{th} day	15^{th} day	22^{nd} day	29^{th} day	36^{th} day	43^{rd} day	49^{th} day
Rotation								
Flexion								
Extension								
Lateral bending								

SIDDHA SYSTEM OF EXAMINATIONS:

1. THEGI: [BODY CONSTITUTION]

1. Vatha udal ☐
2. Pitha udal ☐
3. Kaba udal ☐
4. Thontha udal ……

2. NILAM: [LAND WHERE PATIENT LIVED MOST]

1. Kurinji (Hilly terrain) ☐
2. Mullai (Forest range) ☐
3. Marutham (Plains) ☐
4. Neithal (Coastal belt) ☐
5. Paalai (Arid regions) ☐

3. KAALAM:

1. Kaar kaalam ☐ 4.Pinpani kaalam ☐
2. Koothir kaalam ☐ 5. Ilavenil kaalam ☐
3. Munpani kaalam ☐ 6.Muthuvenil kaalam ☐

4. GUNAM:

1.Sathuvam ☐ 2.Raasatham ☐ 3.Thaamatham ☐

5. IMPORIGAL (SENSORY ORGANS):

	Before treatment	After treatment
Mei		
Vaai		
Kann		
Mooku		
Sevi		

6. KANMENDHIRIYAM (MOTOR ORGANS):

	0^{th} day	8^{th} day	15^{th} day	22^{nd} day	29^{th} day	36^{th} day	43^{rd} day	49^{th} day
Kai								
Kaal								
Vaai								
Eruvai								
Karuvai								

7. KOSANGAL (SHEATH):

	Before treatment	After treatment
Annamaya kosam		
Pranamaya kosam		
Manomaya kosam		
Vignanamaya kosam		
Ananthamaya kosam		

8. UYIR THAATHUKKAL: **[THREE HUMORS] (VALI, AZHAL,IYAM)**

A) VALI

	0^{th} day	8^{th} day	15^{th} day	22^{nd} day	29^{th} day	36^{th} day	43^{rd} day	49^{th} day
Praanan								
Abaanan								
Samaanan								
Udhaanan								
Viyaanan								
Naagan								
Koorman								
Kirukaran								
Devathathan								
Dhananjeyan								

B) AZHAL

	0^{th} day	8^{th} day	15^{th} day	22^{nd} day	29^{th} day	36^{th} day	43^{rd} day	49^{th} day
Analakam								
Ranjakam								
Saathakam								
Prasakam								
Aalosakam								

C) IYAM

	0^{th} day	8^{th} day	15^{th} day	22^{nd} day	29^{th} day	36^{th} day	43^{rd} day	49^{th} day
Avalambagam								
Kilethagam								
Pothagam								
Tharpagam								
Santhigam								

9. SEVEN UDAL THATHUKKAL: (SEVEN SOMATIC COMPONENTS)

	Before treatment	After treatment
Saaram		
Senneer		
Oon		
Kozhuppu		
Enbu		
Moolai		
Sukkilam/ Suronitham		

10. ENVAGAI THERVU:

I. NAADI: [PULSE PERCEPTION]

Day	Naadi
0th day	
8th day	
15th day	
22nd day	
29th day	
36th day	
43rd day	
49th day	

II. SPARISAM: [PALPATION]

Day	Sparisam
0th day	
8th day	
15th day	
22nd day	
29th day	
36th day	
43rd day	
49th day	

III. NAA: [TONGUE]

Day	NAA
0^{th} day	
8^{th} day	
15^{th} day	
22^{nd} day	
29^{th} day	
36^{th} day	
43^{rd} day	
49^{th} day	

IV.NIRAM: [COMPLEXION]

1. Vadham ☐
2. Pitham ☐
3. Kabam ☐

V.MOZHI: [VOICE]

1. High Pitched ☐
2. Low Pitched ☐
3. Medium Pitched ☐

VI.VIZHI: [EYES]

Day	Vizhi
0th day	
8th day	
15th day	
22nd day	
29th day	
36th day	
43rd day	
49th day	

VII. MALAM: [BOWEL HABITS / STOOLS]

	Before treatment	After treatment
Niram		
Irugal		
Ilagal		
Others		

VIII. MOOTHIRAM [URINE EXAMINATION]

NEERKKURI:

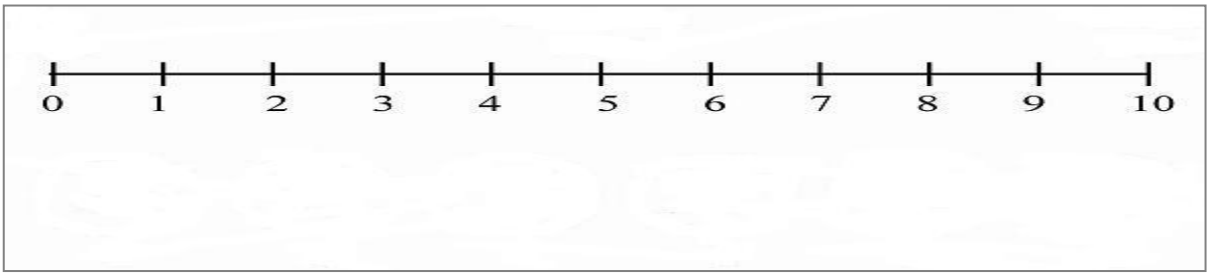
Neerkkuri	Before treatment	After treatment
Niram		
Manam		
Edai		
Nurai		
Enjal		

NEIKKURI

Neikkuri	Before treatment	After treatment
Snake like pattern		
Annular/Ringed pattern		
Pearl beaded pattern		
Other patterns		

PAIN ASSESMENT:

UNIVERSAL PAIN ASSESMENT SCALE



Grade 0 : No Pain

Grade 1 -3 : Mild pain

Grade 4-6 : Moderate pain

Grade 7-10 : Severe pain

- Reference: Clinical Manual for Nursing Practise.(National Institute of Health Warren Grant Magnuson Clinical Center)

GRADATION:

Grade 1- Fit for all activities do their work without support (Normal)

Grade 2 – Mild Pain and Mild restriction of Movements.

Grade 3- Moderate Pain with or without radiation to upper limbs and Moderate restriction of Movements

Grade 4-Severe Pain with or without radiation to upper limbs and Severe restriction of Movements

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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VARMAM THERAPY – OBSERVATION CHART.

ASSESSMENT FORM

SERIAL NO:

OP/IP NO:

NAME:

AGE/ GENDER:

COMPLAINTS AND DURATION:

VARMAM POINTS (IP PATIENTS):

Muduchi Varmam
Kakkattai Kaalam
Manibanthaga Varmam
Kai viral madakku varmam
Kavuli Kaalam

Date	Pain	Tenderness	Radiating pain	Stiffness	Numbness	Duration of relief	Other clinical features.

OTHER REMARKS:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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FORM IV : LABORATORY INVESTIGATIONS PROFORMA

1. SERIAL NO OF THE CASE: ……

2.OP / IP NO: .....

3. NAME: …… 4.AGE: …… 5.GENDER: .....

A) BLOOD INVESTIGATIONS:

BLOOD INVESTIGATIONS		**NORMAL VALUES**	**BEFORE TREATMENT**	**AFTER TREATMENT**
Hb (gm/dL)		**M: 13-18** **W: 11-16**		
T.RBC (millions cells / Cu.mm)		**M: 4.5-6.5** **W: 3.5-5.5**		
ESR (mm)	**½ hr.**	**-**		
	1 hr.	**M: 0-10** **W: 0-20**		
T.WBC (Cells / Cu.mm)		**4000-11000**		
Differential Count (%)	**Polymorphs**	**40-75**		
	Lymphocytes	**20-35**		

	Monocytes	**2-10**		
	Eosinophils	**1-6**		
	Basophils	**0-1**		

BLOOD INVESTIGATIONS		**NORMAL VALUES**	**BEFORE TREATMENT**	**AFTER TREATMENT**
Blood glucose (mg/dl)	**Fasting**	**70-110**		
	PP	**80-140**		
Lipid profile (mg/dl)	**Serum cholesterol**	**150-200**		
	HDL	**30-60**		
	LDL	**Up to 130**		
	VLDL	**40**		
	TGL	**Up to 160**		
RFT (mg/dl)	**Blood urea**	**16-50**		
	Serum creatinine	**0.6-1.2**		
	Serum Uric acid	**M: 3-9** **W: 2.5-7.5**		
LFT (mg/dl)	**Total bilirubin**	**0.2-1.2**		
	Direct bilirubin	**0.1-0.2**		
	Indirect bilirubin	**0.2-0.7**		
	Total protein	**6-8**		
	Serum Albumin	**3.5-5.5**		
	Serum globulin	**2-3.5**		

	Serum calcium	**9-11**		
	Serum phosphorus	**2-5**		
	SGOT (IU/L)	**0-40**		
	SGPT (IU/L)	**0-35**		
	Alkaline phosphatase (IU/L)	**80-290**		
CRP				
ASO titre				
RA factor				

B) URINE INVESTIGATIONS:

URINE INVESTIGATIONS	**BEFORE TREATMENT**	**AFTER TREATMENT**
Albumin		
Fasting sugar		
PP sugar		
Deposits		
Bile salts		
Bile pigments		

C) RADIOLOGICAL EXAMINATIONS

X-Ray cervical spine- AP view, Lateral view

	BEFORE TMT	**AFTER TMT**
XRAY CHANGES		

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

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FORM V: INFORMED CONSENT FORM

"I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.

I consent voluntarily to participate in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my further medical care".

"I have received a copy of the information sheet/consent form".

Date:

Signature of the participant:

In case of illiterate participant

"I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely."

Date:

Signature of a witness Left thumb Impression of the Participant

(Selected by the participant bearing no connection with the survey team)
Date:
Station:

Signature of participant:

Signature of the Investigator: Signature of the Lecturer:

Signature of the HOD

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை 47

அயோத்திதாஸ் பண்டிதர் மருத்துவமனை

சென்னை

சகன வாதம் நோய்க்கான சித்த மருந்துகளின் (மகா அனலுருவ சூரணம் மற்றும் புங்கன் எண்ணெய்) பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் இந்த ஆய்வை குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி : **கையொப்பம்:**

இடம்: **பெயர் :**

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும், மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறை பற்றியும், தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனை பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது, காரணம் எதுவும் கூறாமல், எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்து கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன். நான் என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு சகன வாத நோய்க்கான மகா அனலுருவ சூரணம் (உள் மருந்து) மற்றும் புங்க எண்ணெய் தைலம் (வெளி மருந்து) மருந்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: **கையொப்பம்:**

இடம்: **பெயர் :**

தேதி: **சாட்சிக்காரர் கையொப்பம்:**

இடம்: **பெயர் :**

உறவுமுறை :

விரிவுரையாளர் கையொப்பம்: **துறைத்தலைவர் கையொப்பம்:**

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FORM VI - WITHDRAWAL FORM

SI NO:

OP / IP NO:

NAME:

AGE / GENDER :

DATE OF TRIAL COMMENCEMENT:

DATE OF WITHDRAWAL FROM TRIAL:

REASONS FOR WITHDRAWAL:

- Long absence at reporting : Yes/ No
- Irregular treatment: Yes/ No
- Shift of locality : Yes/No
- Increase in severity of symptoms: Yes/No
- Development of severe adverse drug reactions: Yes/No

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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FORM VII – PATIENT INFORMATION SHEET

Name of Principal Investigator: Dr.V. Vikram kumar

Name of the institute: National Institute of Siddha,

Tambaram Sanatorium,

Chennai-47.

INFORMATION SHEET FOR PATIENTS PARTICIPATING IN THE OPEN CLINICAL TRIAL.

I, Dr. V. Vikram kumar studying M.D (Siddha) at National Institute of Siddha, Tambaram Sanatorium is doing a trial on Cegana vatham (Cervical spondylosis) . It is a most common degenerative disease, occurring throughout the world. In this regard, I am in a need to ask you few questions. I will maintain confidentiality of your comments and data obtained. There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study. Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study.

You can choose not to take part. You can choose not to answer a specific question. There is no specific benefit for you if you take part in the study. However, taking part in the study may be of benefit to the community, as it may help us to understand the problem of defaulters and potential solutions.

If you agree to be a participant in this study, you will be included in the study primarily by signing the consent form and then you will be given the internal medicine

‘‘Maha Analuruva Chooranam (Internal medicine) 1.5gm b.d with honey for 48 days) and ‘‘Pungan Ennai’’ (External medicine), if you wish to stay in the In Patient ward Varmam Treatment will be provided to you assuring that you will not be definitely hurt in any course of treatment.

The information I am collecting in this study will remain between you and the principal investigator (myself). I will ask you few questions through a questionnaire. I will not write your name on this form. I will use a code instead.

The questionnaire will take approximately 20 minutes of your time.

If you wish to find out more about this study before taking part, you can ask me all the questions you want or contact Dr.V.Vikram kumar, PG Scholar cum principal investigator of this study, attached to National Institute of Siddha Ph : 9944457603, Chennai-47. You can also contact the Member-secretary of Ethics committee, National Institute Siddha, Chennai 600047, for rights and participation in the study.

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை 47

அயோத்திதாஸ் பண்டிதர் மருத்துவமனை

சென்னை

சகன வாதம் நோய்க்கான சித்த மருந்துகளின் (மகா அனலுருவ சூரணம் மற்றும் புங்கன் எண்ணெய்) பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

முதன்மை ஆராய்ச்சியாளர் பெயர்: மருத்துவர் வி.விக்ரம் குமார்

நிறுவனத்தின் பெயர் தேசிய சித்த மருத்துவ நிறுவனம்

தாம்பரம் சானட்டோரியம்

சென்னை 600047

தேசிய சித்த மருத்துவ நிறுவனத்தில் பட்ட மேற்படிப்பு பயின்று வரும் நான் மருத்துவர். வி.விக்ரம் குமார் சகன வாதம் என்னும் நோயில் மருத்துவ ஆராய்ச்சியில் ஈடுபட்டுள்ளேன்.

சகன வாதம் என்னும் நோயானது கழுத்துப் பகுதியில் அடி படுவதாலும் எலும்பு தேய்மானத்தாலும் அதிக பளு தூக்குவதாலும் முறையான இருக்கை முறைகளைக் கடைப்பிடிக்காததாலும் உண்டாகிறது.

- து பரவக் கூடிய நோய் அல்ல.

- ந்த ஆராய்ச்சி சம்பந்தமாக சில கேள்விகளைக் கேட்கவும், தேவையான ஆய்வகப் பரிசோதனைக்கு தங்களை உட்படுத்தவும் உள்ளேன்.

- ந்த ஆராய்ச்சிக்கு தாங்கள் விருப்பத்தின் பேரில் உட்படும் பட்சத்தில் உள்மருந்தாக மகா அனலுருவ சூரணம் 1.5கி தேனில் குழைத்து 2 வேளை(காலை மாலை) உணவுக்குப் பின் ஒரு மண்டலம் (48நாட்கள்) உட்கொள்ள வேண்டும். வெளி மருந்தாக புங்கன் எண்ணெய் வெளியே தடவ வேண்டும். வெளி நோயாளர்கள் 7 நாட்களுக்கு ஒருமுறை மருத்துவமனைக்கு வரவேண்டும். உள் நோயாளியாக தங்க விருப்பம் தெரிவிக்கும் பட்சத்தில் நோய்க்குத் தகுந்த வர்மச் சிகிச்சை அளிக்கப்படும்

- ந்த மருந்து சிறப்பாக சகன வாதம் நோய்க்காக அங்கீகரிக்கப்பட்ட சித்த மருத்துவ நூலில் கூறப்பட்டுள்ளது.

- ந்த ஆராய்ச்சியில் தங்களை அனுமதித்த பிறகு உங்களுக்கு விருப்பம் - ல்லையெனில் எப்போது வேண்டுமானாலும் ஆராய்ச்சியில் இருந்து விளகிக் கொள்ள உரிமை உள்ளது.

- ந்த ஆராய்ச்சி சம்பந்தமாக நோயின் தன்மை பற்றியும் மற்ற விபரங்களுக்கும் முதன்மை ஆராய்ச்சியாளரான மருத்துவர்: வி.விக்ரம் குமார் (பட்ட மேற் படிப்பாளர் சிறப்பு மருத்துவ துறை) அவர்களை எந்த நேரத்திலும் தொடர்பு கொள்ளலாம் கைப்பேசி எண் 9944457603

மேலும் - ந்த ஆராய்ச்சிக்கு தக்க அனுமதிச் சான்று (IEC) பெறப்பட்டுள்ளது.

இந்த மருந்து முற்றிலும் பாதுகாப்பான மூலிகைகளைக் கொண்டு தயாரிக்கப்பட்டுள்ளது. பக்க விளைவுகளை ஏற்படுத்தாது.

மேலும் உணவு முறையில் மருத்துவரால் கூறப்படும் பத்தியம் காக்குமாறு அறிவுறுத்த படுகிறது.

- து சம்பந்தமான தங்களது அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும் என உறுதிஅளிக்கிறேன்.

- தில் பயணப்படி முதலிய எந்த உதவித் தொகையும் வழங்கப் பட மாட்டாது.

- ந்த ஆராய்ச்சியின் போது உடலுக்கு வேறு பாதிப்பு ஏற்படும் பட்சத்தில் தேசிய சித்த மருத்துவமனையில் தக்க சிகிச்சை அளிக்கப்படும்.

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FORM VIII - DRUG COMPLIANCE FORM

SERIAL NO:

OP/IP NO:

NAME:

AGE/ GENDER:

DRUG NAME: Maha Analuruva Chooranam

OPD:

On 1st day-Date:	Drugs issued: 21(Gms)	Drugs returned: (Gms)
On 8th day-Date:	Drugs issued: 21(Gms)	Drugs returned: (Gms)
On 15th day-Date:	Drugs issued: 21(Gms)	Drugs returned: (Gms)
On 22nd day-Date:	Drugs issued: 21(Gms)	Drugs returned: (Gms)
On 29th day-Date:	Drugs issued: 21(Gms)	Drugs returned: (Gms)
On 36th day-Date:	Drugs issued: 21(Gms)	Drugs returned: (Gms)
On 43rd day-Date:	Drugs issued: 21(Gms)	Drugs returned: (Gms)

IPD:

Day	Date	Morning	Evening	Day	Date	Morning	Evening
Day 1				Day 2			
Day 3				Day 4			
Day 5				Day 6			
Day 7				Day 8			
Day 9				Day 10			
Day 11				Day 12			
Day 13				Day 14			
Day 15				Day 16			
Day 17				Day 18			
Day 19				Day 20			
Day 21				Day 22			
Day 23				Day 24			
Day 25				Day 26			
Day 27				Day 28			
Day 29				Day 30			
Day 31				Day 32			
Day 33				Day 34			
Day 35				Day 36			

Day 37				Day 38			
Day 39				Day 40			
Day 41				Day 42			
Day 43				Day 44			
Day 45				Day 46			
Day 47				Day 48			

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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FORM IX - DIETARY ADVICE FORM

சேர்க்கக் கூடிய உணவுகள் (Diet to be included):

காய்கள் (Vegetables):

கத்தரிப்பிஞ்சு (Unripe brinjal)

முருங்கைப்பிஞ்சு (Unripe drumstick)

அவரைப்பிஞ்சு (Unripe Dolichos bean)

கீரைகள் (Greens):

பொன்னாங்கண்ணி (Sessile plant [*Alternanthera sessilis*])

மூக்கிரட்டை (Hog weed [*Boerhaavia diffusa*])

தூதுவேளை (Climbing brinjal [*Solanum trilobatum*])

முருங்கைக்கீரை (Leaves of Drumstick [*Moringa oleifera*])

கறிவேப்பிலை (Curry leaf [*Murraya koenigii*])

முடக்கறுத்தான் (Winter cherry [*Cardiospermum halicacabum*])

அறுகீரை (*Amaranthus tristis*)

கரிசாலை (trailing eclipta [Eclipta prostrate])

பழங்கள் (Fruits):

மாதுளை (Pomegranate)

ஆப்பிள் (Apple)

பப்பாளி (Papaya)

ஆரஞ்சு (Orange)

பேரீச்சை (Dates)

அத்தி (Fig)

நாவல் (Jambul [*Syzygium cumini*])

அசைவம் (Non-vegetarian diet):

வெள்ளாட்டுக்கறி (Meat)

காடை (Quail)

சிறு இறால் மீன் (Prawn)

தவிர்க்க வேண்டியவைகள் (Diet to be avoided):

சுரை (Bottle gourd)

பூசணி (Pumpkin)

வெள்ளரிக்காய் (Cucumber)

புடலை (Snake gourd)

பீர்க்கு (Ridged gourd)

உளுந்து (Black gram)

மொச்சை (Indian butter Bean)

காராமணி (Cow gram)

கொள்ளு (Horse gram)

கடுகு (Mustard)

எண்ணெய் (Gingelly oil)

புளிப்பு (Sour)

உப்பு (Salt)

வாயுப் பொருட்கள் (Vatha diet)

உருளைக் கிழங்கு (Potato)

வாழைக் காய் (Plantain)

புகையிலை (Tobacco)

மது அருந்துதல் (Alcohol)

பெண்போகம் (இச்சா பத்தியம்) [Sexual intercourse]

மருத்துவ அறிவுரை (Medical advice):

- ஈரமில்லாத் தரையிலும், படுக்கையிலும் படுத்தல் வேண்டும் (Should avoid sleeping in wet floor or mattress
- குளிர் காற்று படும்படியான இடத்தில் இருப்பதை தவிர்க்கவும் (Try to avoid cool breeze)
- தலையனை பயன்படுத்துவதை தவிர்க்க வேண்டும் (Should avoid sleeping in Pillow)

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON **"MAHA ANALURUVA CHOORANAM "(INTERNAL)** AND **"PUNGAN ENNAI" (EXTERNAL)** IN THE TREATMENT OF **"CEGANA VATHAM" (CERVICAL SPONDYLOSIS).**

FORM X - ADVERSE REACTION REPORTING FORM

SERIAL NO:

OP/IP NO:

NAME: **AGE:** **GENDER:**

DATE OF TRIAL COMMENCEMENT:

DATE OF OCCURRENCE OF THE ADVERSE REACTION: **TIME:**

DESCRIPTION OF ADVERSE REACTION:

MANAGEMENT:

Date:

Station:

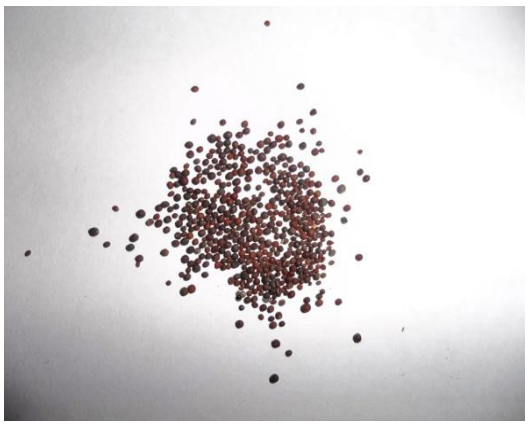
Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

INGREDIENTS

Zingiber officinale

Holoptelia integrifolia stem bark



Brassica juncea

Holoptelia integrifolia root bark

Plumbago zeylanica

Terminalia chebula

Nigella sativa

Pongamia glabra

Piper longum

Emblia ribes

Allium sativum

Picorrhiza kurroa

Syzygium aromaticum

Piper nigrum

Carum capticum

Anethum graveolens

Acorus calamus

Ferula asafoetida

MAHA ANALURUVA CHOORANAM

PUNGAN ENNAI